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By JOHN A. RYLE, M.D., F.R.C.P. Lond.
PHYSICIAN TO GUY'S HOSPITAL

THE sources of inspiration in medicine and the medical sciences are many and varied. There are advantages at all times, but especially in an age of swift material progress, stern competition, and perplexing prospects in pausing occasionally to consider the motives which prompt us and the beliefs which sustain us in our choice of career and in our daily work. As a profession closely concerned with the health and affairs of the individual and the community we are exposed not a little to criticisms both of a private and a public kind and, partly at the direction of the modern press, which thrives on scandal and open dissection of human frailties, we have come, perhaps, to incur a larger measure of censure than was allotted to earlier generations of doctors. Whether the criticisms we encounter have relation to our manners and peculiarities, our education, our attitude to unorthodox therapy, our jealousies, our technical failures or to other defects in our constitutions and our actions, and unjust though many of them may be, we would be foolish and conceited to suppose that none of them are ever well grounded. We are human and fallible. Our problems both of science and practice are far too difficult for us to adopt an attitude of complacency or superiority.

Science forges ahead, often to the embarrassment of practice; times and habits change and ethics suffer. At the present time there are, I would submit, many cogent reasons for a review of motives and beliefs and for a discussion of those ideals without which no body of scientists or humanists can profitably proceed. The beginning of a new session, the meeting of an old and honoured society commemorative in name and aims of the work of a great man, and the precincts of one of the oldest and finest hospitals and medical schools in the world, provide an appropriate occasion and place for such a review.

I have said that the sources of inspiration in medicine are many and varied. Uncritically, perhaps, for our life is full and exacting and we have small time for personal analysis, we all of us perceive that our steps have been directed and our endeavours supported on the one hand by the humane and on the other by the scientific interests of medical work, and, even through times of tedium or disappointment, and while recognising that our labour is also our livelihood, most of us continue to be actuated by these interests.

The inspiration of our teachers and the traditions of our school, of contemporary discoveries such as those of Banting and of Minot, of the journals and the monographs, and, by no means least, of the medical society—upon the moral and practical value of which Osler was so rightly insistent—all these lend their quota. Too few of us are tempted to explore the attractive field of medical history, and yet not one of us goes forth into the world without some consciousness of his debt to those old masters who are more to the eras of medicine than kings and governments have been to the eras of social and political history. The experiment of your own immortal Harvey; the clinical method of Sydenham; the work of the physician-pathologists Bright, Addison, Hodgkin, and Wilks in my own school; Jenner's discovery; the contributions of Pasteur and Lister; and the brilliant advances due to the physiologists in the last century have provided us with a wealth of inspiration upon which each of us must continue to draw through life in greater or less degree.

But it is my purpose to go back to a far earlier period for a source of inspiration which, through many centuries, was accounted the most profound and inexhaustible of all, and to show you that, with all our multitudinous discoveries and fresh forms of knowledge, we can still find in the work and wisdom of Hippocrates and of those who composed the Hippocratic school a method, a science, an art of practice, and a code of professional conduct upon which, as supplying a foundation and an ideal, no subsequent generation has been able to improve. I shall hope to persuade you that occasional readings of Hippocrates are by no means out of date or a waste of time; to stir in those of you who do not already possess it a veneration for one of the noblest figures in that rich and lovely age of Grecian culture; and to remind you that, lacking all the benefits of physiology and pathology, Hippocrates has nevertheless left us lessons in clinical method and record, observations on prognosis, a rational therapeutic system, and, in addition, an outline of medical ethics, from which we can derive instruction and correction to this day.

In case you should doubt the reasonableness of an appeal to such ancient doctrine I need but remind you that philosophers in all subsequent ages have found the chief fountain of their inspiration in the writings of men who were the near contemporaries of Hippocrates, and that just as the Socratic Dialogues of Plato have remained an essential introduction for the student of philosophy and the Bible an essential introduction for the student of Christian morals, so might the Hippocratic Collection, or at least selected readings therefrom, serve as an introduction for the student of the medical arts and sciences. It is a pity that the practical demands of medical education and the incessant developments and discoveries of the clinical and ancillary sciences should, by degrees but so largely, have excluded the desire for contact with early authority. It is our loss too that no individual to-day is so equipped intellectually as to be able again to stand aside and take the general view of medicine in its entirety, to correlate its problems, to balance its science with its art, to perceive and assess the components which make up the intricate "whole" presented to us in the shape of a "disease" or a "sick man." We have become, inevitably, too knowledgeable and too specialised. In the endeavour to think sufficiently anatomically or physiologically; sufficiently in terms of infection and the immunity-response; to assess the constitutional, the environmental and the psychological factors in the individual case—or, in other words, to bring together our too disjointed knowledge for the solution of the individual puzzle, we commonly fail or achieve but a partial success, and in our treatment we often interfere too much. Sometimes, I believe, Hippocrates, with all his limitations, would have succeeded where we fail through his simple habit of observing and noting the facts of nature, through having seen the same things before, through his recognition of disease as a natural process rather than an "abnormality"

* An address delivered to the Abernethian Society, St. Bartholomew's Hospital, on Nov. 15th, 1934.

(which after all is but a small advance on the old idea of demonic possession), and through his clear recognition of the *vis medicatrix naturæ*. But I move ahead of my theme.

LIFE AND WORK OF HIPPOCRATES

Of the details of the life of Hippocrates little is known, but we have evidence that he flourished in the fifth century B.C., that his period of greatest activity was in the latter half of that century, and that he lived to a great age.

His contemporaries included the statesman Pericles; the poets Æschylus, Sophocles, and Euripides; Socrates and Plato, the philosophers; Herodotus and Thucydides, the historians; and Phidias, the sculptor. He came of physicianly stock and probably received a part of his early training in the temples of Health from his own father. The school which he founded was in the little island of Cos in the Ægean Sea. In the market-place of the chief town of Cos there still stands a very aged plane tree which is reputed to have flourished in his day, and in the shade of which he is believed to have taught. Expert opinion has pronounced it possible for the tree to have endured such longevity. In his later years Hippocrates travelled much. His advice was in great demand, and he won in his lifetime a degree of respect and veneration foreshadowing and in full keeping with his later fame.

The Hippocratic Collection consists of a number of writings on medical and allied topics, some of which are ascribed directly to Hippocrates himself, some which may yet be regarded as genuine products of his school to his disciples, and others which are now accounted as spurious and of later date. Among the more noteworthy of these writings are the following: Epidemics I. and III.; Airs, Waters, Places; The Aphorisms; Prognostic; Regimen in Health; Regimen in Acute Disease; The Oath; Wounds of the Head; Fractures; Joints; The Sacred Disease.

Of his work and practice we may assume that he probably saw and advised his patients and taught at a temple of Health or its equivalent, much as a modern physician might hold his clinic. Probably his case records and those of his assistants were accumulated in the library of the institution. Of the case-report system he may be regarded as the founder. We have no doubt from his vivid descriptions of fever cases in The Epidemics that he also visited patients in their homes. Occasionally his opinion was sought by public authorities in great emergencies, as when Athens was afflicted with plague.

The Scientific Ideal

What was the great contribution of Hippocrates to the science of medicine? The advancement of the biological sciences, of which human pathology is surely not the least, has depended upon the combined contributions of observation and experiment. The method of experiment was a late arrival and, although there were experimenters before his time, Harvey may be regarded as its first outstanding exponent. Hippocrates was literally the founder of the observational method, and in this we may claim for him an even greater regard than that implicit in his familiar title, the Father of Medicine. We have to imagine that before his day medicine was compounded in large part of first aid, quackery, and superstition, and that even physicians of repute relied far more upon tradition and speculation than upon recorded fact. Hippocrates set himself steadfastly against speculative philosophies and quack therapy, and applied himself to the task of accumulating knowledge of disease and of man in disease by accurately recording what his own senses revealed to him. The method was extended to the whole realm of natural history by Aristotle, but it is a matter for pride that a physician (and the physician's work bears close similarities with that of the natural historian) was its founder. Prof. J. S. Haldane, in his Gifford lectures on "The Sciences and Philosophy" (1927–1928), writes as follows:—

> "Hippocrates treated the unconscious activities of life as natural processes. He claimed the right to interpret them in accordance with actual observation, regardless of superstition and of the intrusion of philosophical opinions not based on observation of them. In observing Nature just as she appears in the phenomena of life, and basing his opinions directly on the observations, he founded scientific medicine, and with it, as it seems to me, scientific biology. The co-ordinated activity manifested in the phenomena of life was regarded by Hippocrates as nothing more than a visible and tangible manifestation of Nature . . . His influence, through Aristotle and later Greek thinkers and observers, appears to have been a very great one. . . . It seems to me that the attitude of Hippocrates was, and is, the only attitude possible in scientific biology."

And yet how constantly has specialisation, in medicine and biology, led to a neglect of the "coördinating activity" in nature. How constantly to-day are we "side-tracked" into a contemplation of isolated functions and "parts" and a neglect of "wholes." Instead of man we study the parts of man, instead of disease aspects of disease.

Only a reading of the works themselves can convey a full idea of the remarkable powers of observation possessed by Hippocrates. All his senses, seeing, hearing, feeling, smelling, tasting must have been assiduously employed and his deliberations based on his sense-data were illuminated by the clear light of his reason. He has left us living thumb-nail sketches of many diseases, including mumps, the malarias, erysipelas (mentioning how the hair falls after erysipelas of the scalp), empyema, puerperal fever. He described a number of valuable signs both of a general and a local kind. The Hippocratic facies of impending death "with sharp nose and hollow eyes"; Hippocratic succussion in pyo-pneumothorax; "curved nails" or, as we should call it, "clubbed fingers" in empyema; splenic enlargement in malaria; Cheyne-Stokes breathing, "respirations rare and large with long intervals," to use his own words; tetanus after wounds—are all depicted in his records. With no means at his disposal for minute analysis he yet gave the most careful attention to the naked-eye characters of the excreta and of discharges.

In "Precepts" he advises that "one must . . . occupy oneself with facts persistently, if one is to acquire that ready and infallible habit which we call 'the art of medicine.' For so to do will bestow a very great advantage upon sick folk and medical practitioners. Do not hesitate to inquire of laymen, if thereby there seems likely to result any improvement in treatment." The most scientifically trained among us are still too easily tempted to toy with hypotheses instead of occupying themselves with facts. The practitioner remains unduly reluctant to accept help or suggestions from the layman. In "Law" he states "there are in fact two things, science and opinion; the former begets knowledge, the latter ignorance." In medicine, swayed by the intricacy of our problems, we are still sadly prone to guesses and "opinions" which warp the truth-seeking spirit. In "Ancient Medicine" and other works we find references to the constitutional factor, and in "Airs, Waters, Places" to the environmental factors in disease.

PROGNOSIS

Hippocrates attached a very particular importance to prognosis.

"I hold," he said, "that it is an excellent thing for the physician to practise forecasting. For if he discover and declare unaided by the side of his patients the present, the past and the future, and fill in the gaps in the account given by the sick, he will be the more believed to understand the cases, so that men will confidently entrust themselves to him for treatment. Furthermore, he will carry out the treatment best if he know beforehand from the present symptoms what will take place later."

Much unnecessary and unwise treatment, both medical and surgical, might be avoided even now if physicians and surgeons, less wedded to medicines, injections and techniques, and less susceptible to the impulse "to do something" in anxious situations, schooled themselves better in that knowledge of the natural course and eventualities of disease upon which all sound prognosis and treatment depend.

Hippocrates knew the importance of many prognostic signs and often enough their limitations. "If a part of the white appear when the lids are closed, *should the cause not be diarrhœa or purging, or should the patient not be in the habit of so sleeping*, it is an unfavourable, in fact a very deadly symptom." Plucking at the bed-clothes in fevers and pneumonia he also recognised as of grave import, and also grinding the teeth in fevers *unless it has been a habit from childhood*. I would ask you to note how these qualifications complete the accuracy of the observations. The advancement of diagnosis and prognosis has depended and will continue to depend more upon exact clinical observation than upon any other single factor.

"In cases of ulcerated tonsils," he tells us, "the formation of a membrane like a spider's web is not a good sign," and "ulcers on the tonsils that spread over the uvula alter the voice of those who recover." He notices that injuries or incisions on one side of the brain produce spasms on the other side of the body. His instructions for the careful examination of head wounds, with a note on the importance of discovering if the bone is bare and of distinguishing natural sutures from traumatic fissures, are as useful to-day as when they were written.

APHORISMS

His "Aphorisms," many of them beautifully brief and to the point, are clearly the crystallised fruits of repeated observation and accumulated experience. Here are a few of them:—

"Old men endure fasting most easily, than men of middle-age, youths very badly, and worst of all children, especially those of a liveliness greater than ordinary."

"When sleep puts an end to delirium it is a good sign."

"Spontaneous weariness indicates disease."

"In every disease it is a good sign when the patient's intellect is sound and he enjoys his food. The opposite is a bad sign."

"Those who are constitutionally very fat are more apt to die quickly than those who are thin." (The life insurance societies know this well.)

"Pains and fevers occur when pus is forming rather than when it has been formed."

"A convulsion supervening upon a wound is deadly."

"Consumption occurs chiefly between the ages of eighteen and thirty-five."

"If diarrhœa attacks a consumptive patient it is a fatal symptom."

"Apoplexy occurs chiefly between the ages of forty and sixty."

"In the case of a person afflicted with hiccough, sneezing coming on removes the hiccough."

"In acute diseases chill of the extremities is a bad sign."

"Whenever abscess of the liver is treated by cautery or the knife, if the pus flow pure and white, the patient recovers, for in such cases the pus is in a membrane; but if it flows like as it were lees of oil, the patient dies."

Was he contemplating surgery and the early substitutes for diathermy in malignant growth when he wrote: "Those diseases that medicines do not cure are cured by the knife. Those that the knife does not cure are cured by fire. Those that fire does not cure must be considered incurable"?

The examiners may require us to know the calcium content of the blood and the technique of the Wassermann reaction. The aphorisms are more useful in practice.

In describing his bedside method and the things particularly to be observed there Hippocrates wrote as follows:—

"With regard to diseases, the circumstances from which we form a judgement of them are—by attending to the general nature of all, and the peculiar nature of each individual—to the disease, the patient and the applications—to the person who applies them, as that makes a difference for better or worse—to the whole constitution of the season, and particularly to the state of the heavens and the nature of each country; to the patient's habits, regimen and pursuits, to his conversation, manners, taciturnity, thoughts, sleep, or absence of sleep, and sometimes his dreams, what and when they occur; to his picking and scratching; to his tears; to the alvine discharges, urine, sputa and vomitings, and to the changes of diseases from one to another; to the deposits whether of a deadly or critical character; to the sweat, coldness, rigor, cough, sneezing, hiccough, respiration, eructation, flatulence, whether passed silently or with a noise; to hæmorrhage and hæmorrhoids; from these and their consequences we must form our judgement."

Could we desire a more concise exhortation to attentive history-taking and clinical observation?

His philosophy with regard to disease and its origins is portrayed in the beautiful fragment entitled "The Sacred Disease," the name given to epilepsy, a disorder considered for centuries after Hippocrates to be an evidence of demonic possession:—

"I am about," he says, "to discuss the disease called 'sacred.' It is not, in my opinion, any more divine or more sacred than other diseases, but has a natural cause, and its supposed divine origin is due to men's inexperience, and to their wonder at its peculiar character." And again: "It has the same nature as other diseases, and the cause that gives rise to individual diseases. It is also curable, no less than other illnesses, unless by long lapse of time it be so ingrained as to be more powerful than the remedies that are applied. Its origin, like that of other diseases, lies in heredity."

In the same work he discusses the brain as the seat of consciousness and the emotions, a conception quite unfamiliar at that period when the heart and the diaphragm were commonly held to be the seat of the soul.

OBSERVATION AND RECORD

The importance of accurately observing and recording facts; of studying the whole event and all attendant circumstances; of viewing the phenomena of disease as natural phenomena and not as due to malign agencies or, as we should say, "abnormalities"; these, in brief, are the main lessons of the Hippocratic creed. To-day, as then, the physician if he would be a good healer must first be a good natural historian. The scientific ideal in medicine does not of necessity demand intensive abstract study of minutiæ, prolonged specialistic inquiry, or training or discovery by experiment alone. Rather

does it require insistence on truth, correction of error, an understanding of the methods whereby truth is ascertained, an ability to sift evidence, and an appreciation of "wholes" and of those coördinating activities which determine the nature of things, and without some understanding of which our study of "parts" may become an enfeebling or confusing rather than an enlightening process. Properly used and weighed bedside experience can point the way to the goal of biological truth as surely as the departmental experience of the laboratory.

To what extent does modern medical education help us to apply the Hippocratic method or subserve the Hippocratic ideal? In the clinical period the opportunity is there for all, even if the material of wards and out-patients be too limited, lacking much that the life of practice provides. We have also the guidance of our teachers and the stimulus of contact with other minds pursuing the same ends, but we must confess that the constant increments to knowledge and the steady arrival of new diagnostic tests and implements encumber us with difficulties and in some degree hamper both the use of the unaided senses and the growth of judgment. Invaluable though our accessory methods of inquiry have become we also know that in practice many of the best diagnoses and nearly all the best decisions in emergencies are accomplished without radiological or laboratory aids. In the pre-clinical period, although a thorough grounding in chemistry, physiology, and anatomy is an obvious necessity, it seems to me that the curriculum provides little scope for the cultivation of "the habit of observation." In the dissecting-room we train our hands and the anatomical sense, rediscovering what has often been described, but we also exhaust our memories with names of parts, and we do not learn to see new and vital things for ourselves. In physiology, the most valuable of the ancillary subjects, we find our introduction to the experimental method and usefully train the mind to think in terms of function, but we tend to lose the application of such knowledge and have to accept a number of doctrines liable themselves to flux and change, and altogether have so much to absorb that we commonly cease to inquire. Much of this basic knowledge in anatomy and physiology is essential; much of the detail otherwise. We use the microscope and the test-tube, and we must know how to use them, but little is done to exercise the unaided senses, the inquisitive "look-about-you" faculty, the sympathetic appreciation of vital phenomena as shown in human feelings and actions, or to train the mind to detect the moods and passions and psychological peculiarities of other minds. Indeed for the first three years of the medical curriculum the observing faculty, which is so sharp in the unencumbered child, so necessary in the naturalist and the physician, and which was developed in so remarkable a degree by Hippocrates, is not only not encouraged but to some extent inhibited by educational modes which seek to harbour the scientific spirit with a type of training suitable for the student of physics or chemistry, but inappropriate for the student of man in health and disease. On entering the wards we have to develop a new orientation and a new method, and in the process most of what we have garnered in the pre-clinical period, and even much of what was useful therein, rapidly goes by the board.

One of my own teachers, a great surgeon, clinician, and pathologist, the late Sir Charters Symonds, urged in a Hunterian Oration 13 years ago that clinical opportunities should be given from the very first. "The student of medicine," he said, "throughout his life must be sensible of the atmosphere which surrounds the sick-bed." And again: "The only opportunity the student of medicine has for independent observation . . . is in the clinical field, and the sooner he is brought there the better." Many of us share these sentiments. The ward, the out-patient clinic, the consulting-room and the home are the only places in which we can learn the Hippocratic method at first-hand.

The Therapeutic Ideal

Among the critics of Hippocrates, and even this great man has had a few detractors, there have been those who objected that he was so intent upon observing disease that he neglected his patients. Through his influence, they would aver, other physicians in other ages have been guilty of scientific callousness. In hospital work the temptation to be interested in man's pathology rather than in man himself is one which some find difficult to resist, but that is to be traced rather to a narrow curiosity than to callousness, and it must be rare indeed for it to lead to neglect. I have found nothing in my own reading of the Hippocratic collection to justify the criticism as directed against its author. Recognising disease processes in the body as a contest between the body tissues and other natural agencies, and aware of the spontaneous tendency to recovery in the great majority of diseases and the great majority of patients, he concluded that recovery from disease, just like disease itself or death from disease, was a natural phenomenon. "Nature," he or one of his followers said, "is the physician of diseases." Sydenham expressed himself more strongly when he declared that "To imagine Nature incapable to cure diseases is blasphemy; because that would be imputing imperfection to the Deity, who has made a great provision for the preservation of animal life." With our more intimate understanding of pathology we continue to support this doctrine. We continually relieve suffering by surgery, psychotherapy, and the judicious employment of diet and drugs, but, if we except the knife in certain types of injury and local disease, a few specific chemicals in protozoal diseases, the substitution therapies, and one or two life-saving antitoxic sera, with all of which we lend a dramatic assistance to nature, we must confess that we are to this day powerless in the strict sense to cure disease.

We have ample evidence that Hippocrates did not withhold, any more than we do, the assistance which physician and nurse may give to patients to enable them the better and the more speedily and comfortably to combat their maladies.

In surgery he insisted on cleanliness, using wine for washing wounds and urging that dryness should be secured in lacerated wounds; he instructed the surgeon to keep his nails short; he trephined for certain head injuries; he taught methods of reducing dislocations which we still employ; he recognised the therapeutic value of rest, and of hot and cold applications, and of baths, and the inadvisability of prescribing alcohol in head injuries. He was an advocate of barley water in fevers and used hydromel and oxymel, giving indications for each. He was a good psychologist, as indeed every successful physician must be. He speaks of the necessity of performing actions in the sick-room "calmly and adroitly," of giving orders "with cheerfulness and serenity"; but sometimes of "reproving sharply and emphatically." He advises keeping "a watch on the faults of the patients, which often make them lie about the taking of things pre-

scribed." "One must not," he says, "be anxious about fixing a fee. For I consider such a worry to be harmful to a troubled patient, particularly if the disease be acute. . . . For, in heaven's name, who that is a brotherly physician practises with such hardness of heart as not at the beginning to conduct a preliminary examination of every illness and prescribe what will help towards a cure, to heal the patient and not to overlook the reward, to say nothing of the desire that makes a man ready to learn?"

"Loud talking," we are reminded, "is painful. Overwork calls for gentle dissuasion. A wooded district benefits."

He is alive to the disagreements existing among physicians in the matter of therapeutic beliefs and of the discredit which this brings them in the minds of the laity. He makes astute observations such as the following: "For if disease and treatment start together, the disease will not win the race." I am reminded by this in our modern medicine of the remarkable effects of antitoxin administered early, before the spread of toxins, in diphtheria and infected wounds as compared with the much more dubious influence of antistreptococcal and antipneumococcal sera, which can seldom be given before the disease is established and declared. "Do not," he says, "disturb a patient either during or just after a crisis, and try no experiments, neither with purges nor with other irritants, but leave them alone." Regimen in health and disease receive full consideration but, realising the variability of the constitution of man and his circumstances, he admits that "it is impossible to treat of the regimen of man with such a nicety as to make the exercises exactly proportionate to the amount of food." He believes in giving responsibilities to dressers and clerks, and to the patient.

"Let one of your pupils be left in charge, to carry out instructions without unpleasantness, and to administer the treatment." "The art has three factors: the disease, the patient and the physician. The physician is the servant of the art. The patient must co-operate with the physician in combating the disease."

But perhaps the greatest therapeutic principle of all those which the Coan school has left to us is this: "As to diseases, make a habit of two things—to help, or at least to do no harm." As experience accumulates many of us must reluctantly confess that we see a vast deal of harm in practice due to injudicious interference. The policy of "letting well alone" in an improving case, even though improvement be slight, is a sound one but often ignored. The urge "to do something" in the acute or anxious case, even though it be not clear what that "something" should be, often prevails, when it would have been far wiser to wait and watch. Against the countless triumphs of surgery we have to set a long list of harmful interferences, especially in the abdominal field. The more potent a treatment is for good, the more potent also is it for ill when misapplied. It is important to avoid timidity in our actions or a permanent policy of *laissez-faire*, but in being bold we should never become oblivious to the wise restraint of that injunction to "do no harm."

The Ethical Ideal

If there be present need for a revision, in the light of early teaching, of our ideas relating to the science and art of medicine, the occasion is, perhaps, still more ripe for a revision of ethical ideas. The war, as though in some small compensation for vast evil, brought benefits to medical and surgical knowledge, but its interruptions have in some degree been damaging to the old ethical standards of the profession. The former friendly relationship between doctor and doctor and patient and doctor, although they are still among the happier rewards of practice, have been subjected to various strains and, if there has been more freedom of thought and action, this has sometimes been counterbalanced by a loss of mutual trust and understanding.

I hear occasional complaints from older men that appropriation of patients by newcomers, criticisms of colleagues to patients and by patients, and uncorrected inconstancy among patients manifest in their flittings after specialist and unorthodox opinion, are much more common than in the old days. Cloaked advertisement, "stunt" treatments, and commercial methods have crept in insidiously in some quarters. Jealousies are rife. These evils are not new, but if there be any truth in the impression that they are increasing it is time that a profession which has hitherto maintained its standards at a very high level should immediately seek to set its house in order.

The rules were all laid down between two and three thousand years ago in the Oath, the Precepts, the Decorum, Physician and Law of the Hippocratic Collection.

In the Oath the physician swears among other things that: "Whatsoever I shall see or hear in the course of my profession, as well as outside my profession in my intercourse with men, if it be what should not be published abroad, I will never divulge, holding such things to be holy secrets." We cannot too often remind ourselves of the importance of professional secrecy or too closely guard our tongues from gossip.

Of the physician it is written that "The prudent man must also be careful of certain moral considerations—not only to be silent but also of a great regularity of life, since thereby his reputation will be greatly enhanced; he must be a gentleman in character, and being this he must be grave and kind to all."

"Physicians who meet in consultation must never quarrel, or jeer at one another. For I will assert upon oath, a physician's reasoning should never be jealous of another. To be so will be a sign of weakness." "You must also avoid adopting, in order to gain a patient, luxurious headgear and elaborate perfume. For excess of strangeness will win you ill-repute. . . . Yet I do not forbid you trying to please, for it is not unworthy of a physician's dignity." "A physician does not violate etiquette even if, being in difficulties on occasion over a patient and in the dark through inexperience, he should urge the calling in of others, in order to learn by consultation the truth about the case."

Consideration for the patient's pocket could scarcely be more nicely prescribed than in the following words: "I urge you not to be too unkind, but to consider carefully your patient's super-abundance or means. Sometimes give your services for nothing, calling to mind a previous benefaction or present satisfaction. And if there be an opportunity of serving one who is a stranger in financial straits, give full assistance to all such. For where there is love of man, there is also love of the art."

Here then we have, in these few quotations, sane and kindly recommendations for the physician's life, requiring of him a high morality, devotion to professional secrecy, avoidance of jealousy, willingness to confer with colleagues, avoidance of undue "show," and kindness to patients in the matter of fees. We need no other code.

DISCIPLES OF THE HIPPOCRATIC METHOD

It might seem invidious to select from the pages of medical history men who have exemplified the Hippocratic type above their fellows. In every era, although there were dark gaps in the Middle Ages,

and in every civilised country there have been physicians, eminent or obscure, who have faithfully pursued the old ideal. Sydenham well earned his title of "the English Hippocrates" in his professional life and in his endeavour to give a true description of the natural history of diseases. William Heberden, who gave the first account of angina pectoris in all its clinical details, and insisted on careful note-taking, was of similar breed. Trousseau and Osler, great teachers and practitioners, were of the same genus. But countless others among physicians and surgeons and among general practitioners of the lovable, cultured type of Dr. John Brown—the author of "Rab, and his Friends"—have fulfilled the Hippocratic behest. Among our own colleagues and teachers and family doctors we could name not a few besides. If we look beyond the anecdotes which grew up around John Abernethy and have given him a reputation for uncouthness we must agree to include him in the same school. Another great surgeon, Syme of Edinburgh, accounted Abernethy the finest surgical mind after John Hunter and Percival Pott, but he was a physician too, a physiologist, and even a psychologist, for he wrote a well-reasoned little essay on the Mind. He saw things whole and based his views and treatment on sound observation and common sense. His generosity to poor patients is proverbial and can seldom have been surpassed.

The Future of Medicine

How shall we weld the methods of Hippocrates and Harvey to obtain the fullest benefits of both? How are we to combine the old with the new? Experimental medicine, full of gifts, firing the imagination and claiming the industry of the younger generations, but moving ahead with too little coördination and control; the old steady observational medicine, no less scientific in careful hands, but often betrayed by lack of accuracy and care; and the art of practice based upon an admixture of these sciences with human kindliness and vision and courage and much restraint—how, in our individual and professional lifetime, are we to accomplish a wiser use and application of these three? How again are we to modify our curriculum and examination system in such a way as to lighten the burden of the student and yet give him firmer foundations and a broader view?

For myself I should like to appeal for better opportunities for observational training and the use of the senses in field natural history during the school period, and better opportunities for continuing the education of the senses by parallel clinical study of the healthy and the sick during the pre-clinical phases of medical education. Eyes, hands, ears, and nose, and the technique of history-taking, require constant utilisation and free scope. To quote Dr. John Brown: "In a word, let me say to my young medical friends, give more attention to steady common observation—the old Hippocratic ἀκρίβεια, exactness, literal accuracy, precision, niceness of sense; what Sydenham calls the natural history of disease. Symptoms are universally available; they are the voice of nature. . . ."

Human psychology, in its daily practical bearings (and more than half of medicine is psychology), must take its place beside a more practical and less elaborate human anatomy, physiology, and pathology. Specialism in education (and most pre-clinical and extra-clinical teachers have, of necessity, the specialist outlook) carries with it the same disadvantages as too early specialism in practice. It discourages the free use of the senses and reasoned correlation of facts and delays the growth of judgment, which is the clinician's crowning need. If we are to breed more and better specialists it is also, to my thinking, essential that we should preserve a just balance by breeding more and better workers in the field of general medicine.

In the domain of practice, whether we come eventually to a State service or move forward in our present paths, we must seek to temper our new science and indispensable discoveries with what our fathers possessed in better measure than we do—the old Hippocratic principles of art and conduct. In every branch we need something of the philosophy of the man who, with all his vast learning and achievement, was humble enough to realise, as his most famous aphorism reminds us, that "Life is short, the Art long, opportunity fleeting, experience treacherous, and judgment difficult." With the aid of such wise humility and his strong exhortations to patient research and a love both of truth and man, we shall one day combine the new with the old, resolving present difficulties, and raise the standards of the Science and Art of Medicine to a level at present beyond our vision.

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SOME AIDS TO TIDY OPERATING

By W. H. Ogilvie, M.Ch. Oxon., F.R.C.S. Eng.

ASSISTANT SURGEON TO GUY'S HOSPITAL, LONDON

To the surgeon operating always with the same trained assistants, who remain with him for considerable periods, tidy operating presents no difficulties. To those less fortunately placed its achievement is an ever-present problem. The devices whereby I am attempting to solve this problem for myself have undergone sufficient trial to have passed the experimental stage. That I have found them useful, and that several colleagues have adopted them in their own work, is my excuse for publishing them.

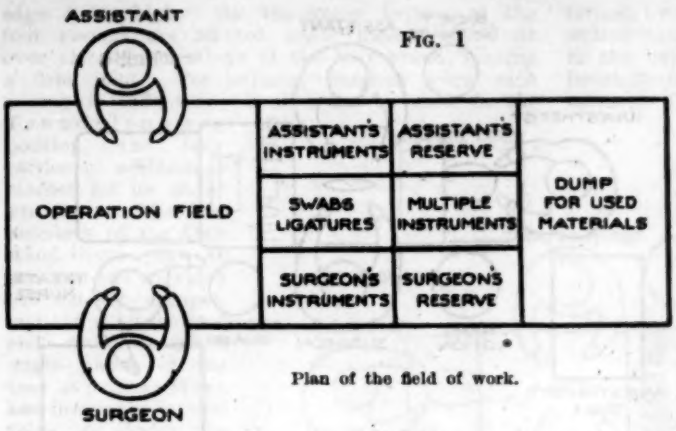
During any surgical operation many kinds of instruments and materials are brought into use, some constantly, some intermittently, some only occasionally. The surgeon and his assistant, possessed of only two hands apiece, must each put down one instrument as they take up another, and, if the operation is a prolonged one of some difficulty, especially if its urgency calls for rapid work, these tools are apt to be laid close to the operation area, often on top of some which have been used earlier. The field of work under such circumstances only too easily becomes a confused mass of instruments, used and unused, clean and dirty, in which that required at the moment cannot be readily identified. The appearance of such a table is distressing to the surgical sense, and its effect upon efficiency disastrous.

It appeared to me that the solution of the difficulty lay in the subdivision of the sterile part of the operation table, that is from the anæsthetist's screen to the foot, into three zones:—

(1) The operation field, in which only those instruments and materials in actual use should be allowed to remain.

(2) The instrument zone, in which all instruments required for the operation should be kept. Each instrument should have its appointed place in the zone, where it

FIG. 1

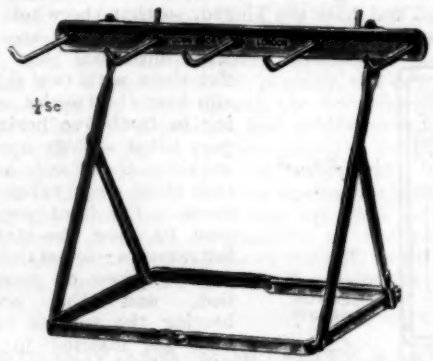


Plan of the field of work.

could readily be found, and to which it should be returned when no longer required.

(3) The dump—in which should be deposited things no longer required, or those needing cleansing before further use.

FIG. 2 A



Folding instrument rack.

The instruments and materials used in an operation fall into several distinct categories :—

(1) *Multiple Instruments:* artery forceps; Mayo-Ochsners; Lane's tissue forceps; towel forceps.

(2) *Surgeon's Instruments:* knife; toothed dissecting forceps; plain dissecting forceps; Mayo scissors.

(3) *Assistant's Instruments:* toothed dissecting forceps, plain dissecting forceps; stitch scissors.

FIG. 3 A

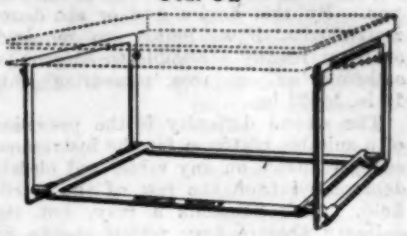
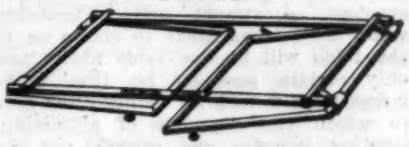


FIG. 3 B



Folding tray stand.

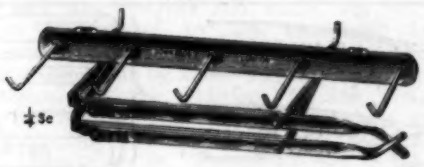
(4) *Instruments used occasionally during any operation* retractors.

(5) *Special Instruments for certain Operations:* examples—intestinal clamps, Moynihan's gall-bladder forceps.

(6) Swabs. (7) Ligatures. (8) Suture materials.

The instruments included in each category are my own selection, but the general grouping holds good

FIG. 2 B



for any surgeon. The articles in the second, fifth, and eighth groups are used by the surgeon, those in the third and fourth groups by the assistant, and those in the first, sixth, and seventh group by surgeon and assistant alike. The necessary subdivision in the field of work thus becomes clearer, and must be something like that in the plan shown in Fig. 1.

When we come to work this plan out in greater detail, the most obvious difficulty to be solved is the disposal of the multiple instruments in Group 1. These are numerous, and the space available for them in the instrument zone is limited. This problem has been solved by an instrument rack, on which each

FIG. 4 A

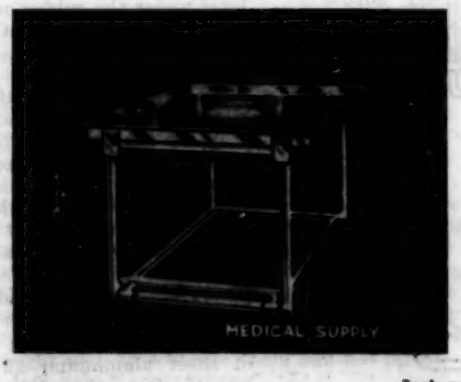
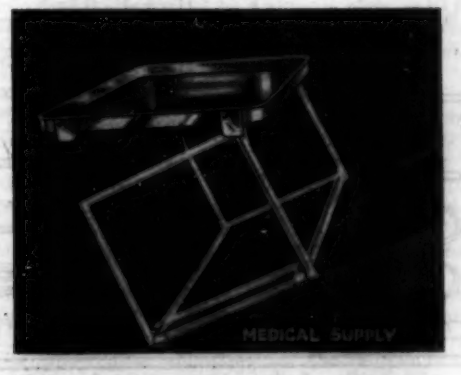


FIG. 4 B

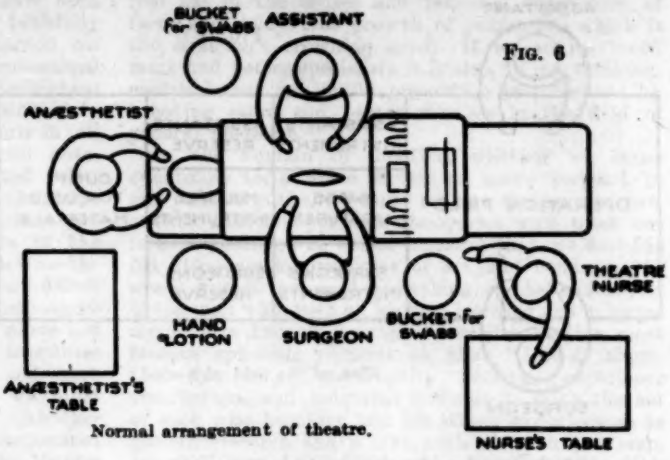


Instrument tray on stand.

batch of instruments is held on its own peg. By this device five or six dozen instruments, if so many are required, are kept readily accessible to surgeon or assistant on an area measuring only 10 in. by 7½ in.

The second difficulty is the provision of a suitable platform for the instrument zone, available on any table, and clearly demarcated from the rest of the sterile field. This demands a tray, but the ordinary theatre tray which stands on the floor cannot be transported, needs constant adjustment, and is unstable, while those trays made to clamp on to the table will fit one table alone, and only certain positions on that table. I first worked with an ordinary tea tray to which two supports of aluminium sheeting, concave and serrated on the under surface, had been riveted. This tray rests securely over the patient's thighs and is admirable for ordinary work; when, however, local anæsthesia is used for any prolonged operation, its weight becomes irksome to the patient. I now use a light folding stand which can be put on any table at any level, and which carries the tray securely at a convenient height.

FIG. 6

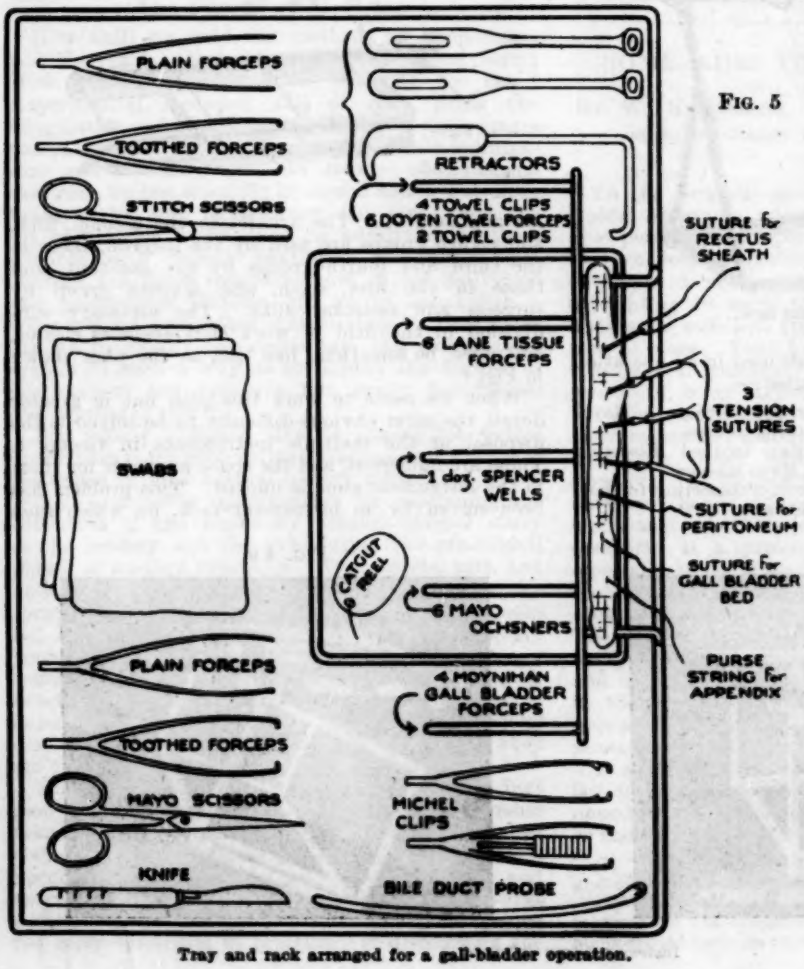


Normal arrangement of theatre.

DETAIL OF THE THREE INSTRUMENTS

The *instrument rack* (Fig. 2).—This consists of two parts, a stand and a horizontal bar. The stand, made of thin strip steel, has a quadrilateral base 10 in. by 7½ in., bearing two trestles on its short sides. The trestles and base are hinged, so that the whole folds into small compass, and will go into any steriliser. The horizontal bar is a flat sheet with two slots to slip over the trestles, carrying in front five horizontal pegs tilted slightly upwards at their ends, and behind two short pegs tilted outwards. The front pegs are used to hang the multiple instruments; round the back pegs a piece of gauze is tied, and the needles bearing the sutures to be used are inserted in this, those required first being next the surgeon. The rack when erected is rigid, and perfectly stable even when carrying its maximum load of eight dozen instruments.

FIG. 5



Tray and rack arranged for a gall-bladder operation.

The *tray stand* (Fig. 3) is made of steel tubing, in three sections, hinged together. The middle section is flattened and is put across the table at the required level under the rubber mattress; the side sections then drop out of the way. In use the side pieces are lifted up to the vertical, where they come against stops on the middle section. The tray is then slipped over the side pieces, locking them in position, and held by them at a height of 10 in. above the table. For transport the two side pieces fold flat on the middle section.

The *tray* (Fig. 4) is of sheet aluminium, 22 in. by 16 in., and has an

edge 1 in. high. On the under surface of the four corners are riveted angle pieces, which fit over the side members of the tray stand, making a firm joint. For ordinary surgical work such a tray is sufficient. If it is to be used in the Trendelenburg position, the tray carries in addition a ratchet on its under surface, and the side members of the tray stand have pegs at the head end on which the ratchet engages, and strips at the foot end, which hold the angle pieces of the tray as it tilts. When not in use the ratchet folds up under the tray.

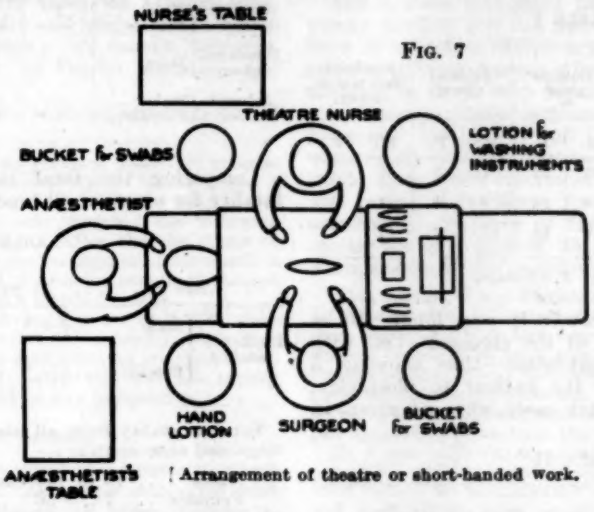


FIG. 7

Arrangement of theatre or short-handed work.

THE INSTRUMENTS IN USE

While the patient is being anæsthetised, the instrument nurse loads all the multiple instruments on the rack, and puts the threaded needles in position behind it. When the patient is ready, the side pieces of the stand are tilted up and the tray slipped over them. The skin is painted, and sterile mackintoshes and towels are put in position over the patient and the tray. The rack with its instruments is then placed in the centre of the tray against its back edge. Along the front half of the tray are three groups of equipment—surgeon's instruments on the patient's right, assistant's instruments on the left, swabs in the middle. The ligature reel is placed in the square formed by the base of the rack; if the assistant is a skilled knot tier, two reels are used. Retractors lie in the back left corner (assistant's corner), special instruments in the back right corner (surgeon's corner). The table is now divided into the three required zones, all sterile: first the operation area, second the tidy instrument area, third the dump—beyond the tray. Here used instruments are put down, taken up by the nurse, washed, and returned to their proper place.

To make matters abundantly clear I append three diagrams, one of my own arrangement of stand and tray for a gall-bladder operation, one of the arrangement of the theatre for an ordinary operation, the third for short-handed work in a nursing-home (Figs. 5, 6, 7). The instrument rack was designed and made four years ago to my suggestions by my chauffeur, Andrew Jamieson, and has remained unaltered; the first tray was also made by him. The tray and stand are my design, but the additions for the Trendelenburg position are the work of my late dresser, Mr. G. Humby. These instruments are made by Down Bros., of St. Thomas's-street, S.E.1; the Medical Supply Association, of Gray's Inn-road, W.C.1; and Willen Bros., of 94, Charlotte-street, W.1.

ÆTIOLOGY AND MORTALITY-RATE OF HÆMATEMESIS

By F. F. HELLIER, M.A. Camb., M.D., M.R.C.P. Lond.

MEDICAL REGISTRAR AND TUTOR, GENERAL INFIRMARY, LEEDS

A RECENT discussion at the Royal Society of Medicine [1] has again focused attention on the problem of hæmatemesis, and it is therefore of interest to put on record the findings in 303 cases presenting the cardinal symptom of hæmatemesis of such severity as to require hospital treatment, admitted to the General Infirmary at Leeds in the years 1926–32 inclusive.

The causes of the hæmatemesis were as follows:—

Proved ulcers	96	Cirrhosis	10
Probable ulcers.. ..	106	Carcinoma ventriculi ..	5
Splenic anæmia ..	14	Doubtful	72

The group labelled "doubtful" includes those who for various reasons left the hospital before investigations were completed, but the majority were cases with a vague history, many of them being negative on X ray examination and some where there were also negative findings at laparotomy. Probably most of these were cases of "acute erosions" but it was thought wise to separate them and not include them as definitely "acute ulcers."

ULCERS

These have been provisionally divided into "proved" and "probable," the diagnosis in the former having been confirmed either by radiography, operation, or autopsy, whilst the latter include those in whom the history was strongly suggestive but in which a radiogram was either not obtained or was negative. This latter group is justified because in no case was a radiogram taken less than three weeks after the initial hæmatemesis and in many cases only after long periods of strict medical treatment. It may also be assumed that any case with a positive radiological finding must be a chronic ulcer as defined by the pathologists. This is a point of importance, as in other statistics—e.g., Bulmer [2]—the cases are classified as acute and chronic ulcers, but the term "acute" is not defined and probably includes cases which are here called doubtful because they cannot be proved to be cases of ulceration. I have further divided them as far as possible into gastric and duodenal ulcers, but, of course, in the second group, where the diagnosis is based upon clinical grounds alone, such a differentiation cannot be absolute.

Analysing first of all the incidence of types of ulcer we find the results given in Table I.

Among the ulcer cases 36 died, but in 4 cases perforation was associated with the hæmatemesis and was the true cause of death, while in 2 more death followed an operation for the radical cure of the ulcer when the patient had rallied from the

hæmatemesis. Only 30 deaths (14·8 per cent.) therefore were due primarily to the hæmatemesis. A post-mortem examination was performed on all these cases and the type of ulcer described, an interesting point being that in a number of cases an apparently acute

TABLE I

—	Duodenal ulcer.		Gastric ulcer.		Jejunal ulcer.		Unclassified peptic ulcer.	
	M.	F.	M.	F.	M.	F.	M.	F.
Proved ulcers, 96.	33	2	31	22	7	1	—	—
Probable ulcers, 106.	16	1	40	26	8	1	11	3
Ulcers, 202	49	3	71	48	15	2	11	3

M. = male; F. = female.

ulcer (as defined by Stewart [3]) was found to be associated with scarring of the stomach—i.e., with evidence of previous ulceration—thus showing a liability on the part of the patient to ulceration.

The details of the fatal cases were as given in Table II.

TABLE II

—		M.	F.
Gastric ulcers	Acute	2	2
	Acute with scarring	5	4
	Chronic	7	2
Duodenal ulcers, chronic		6	—
Jejunal ulcers, chronic		1	1

Of the acute ulcer cases one man had a history of 18 months' ill-health following a tooth extraction and for a month had had a poor appetite but no actual pain, and the other had suffered from gross heart failure for some months, a severe hæmatemesis being the final cause of death. Of the two women, one had had vague indigestion for a year and the other died half an hour after admission and no history was obtained.

In all except one of the cases of acute ulcers with scars there were histories suggesting ulceration for considerable periods, so that it is probably fair to class these with the chronic ulcer group which, either by history or radiography, could have been diagnosed ante-mortem, whilst the acute ulcers without scarring, together with two cases of doubtful origin upon whom

TABLE III

—		Cases.	Deaths.	Per cent.
Gastric ulcers	Males	71	12	15·5
	Females	48	6	12·5
Duodenal ulcers	Males	49	6	12·3
	Females	3	—	—
Jejunal ulcers	Males	15	1	6·6
	Females	2	1	—

no post-mortem was performed, correspond to the group of uncertain cases. Thus the mortality-rate for diagnosable ulcers would correctly be as given in Table III.

In addition there were 6 deaths (4 acute ulcers and 2 doubtful) among 72 cases (8·3 per cent.), the origin of whose bleeding could not be determined during life.

Analysing the fatal cases according to age (Table IV.):—

TABLE IV

Age		21–30	31–40	41–50	51–60	61–70
Gastric ulcer	Male	2	5	2	3	2
	Female	—	—	3	4	1
Duodenal ulcer	Male	2	1	1	2	—
Jejunal ulcer	Male	—	—	—	1	—
	Female	—	—	1	—	—

Comparing the total incidence with the total fatality for ulcers of all kinds (Table V.):—

TABLE V

Age		11–20	21–30	31–40	41–50	51–60	61–70
Incidence	Male	4	25	38	38	29	12
	Female	2	6	7	23	15	3
Fatality	Male	—	6	4	3	6	2
	Female	—	—	—	4	4	1

Total mortality from all ulcers which could have been diagnosed ante-mortem:—

Males .. 19 in 146 cases .. 13·0 per cent.
Females .. 7 ,, 56 ,, .. 12·5 ,,

The anatomical position of gastric ulcers as revealed at autopsy was always on the lesser curvature or on the posterior surface close to it, except in two cases, both of which were acute ulcers; the distribution of the ulcers on the lesser curvature was anywhere from 1½ in. from the cardia to a similar distance from the pylorus. The duodenal ulcers were all posteriorly situated.

In only two instances did death follow a solitary hæmatemesis and both were in duodenal ulcers. In one the cause of death was really a bronchopneumonia and death occurred eleven days after a very large single hæmatemesis, while in the other thrombosis of a coronary artery was found post mortem, possibly secondary to the fall in blood pressure caused by the hæmorrhage.

CASES OF DOUBTFUL ORIGIN

The next group comprises 72 cases (23·7 per cent.) in which there was not sufficient evidence to warrant a diagnosis. This type of case has been fully discussed lately by M. E. Shaw,[4] who found 39 per cent. (in 28 cases) to which he could attribute no definite diagnosis. His criteria were somewhat stricter than mine, inasmuch as I have included as probable ulcers some cases in which there has been a definite history but in which radiological evidence at a later date proved negative. I shall therefore not discuss this interesting problem but merely give the details.

There were 43 males and 29 females. In 39 there was a history of less than one month and in 21 no history at all of any indigestion. In 6 cases hæmatemesis had occurred previously and 2 of these never had any history of indigestion, whilst in 2 others there was less than a fortnight's history. Three of these cases were radiographed with negative results, though in one case the test-meal showed a hyperchlorhydria. In 2 cases operations were performed for the hæmatemesis and no ulcer was found; in 2 others laparotomies had been performed on previous occasions for hæmatemesis with negative findings, and one of these had had her abdomen opened a second time. In 37 cases radiograms appeared

normal, except one where an ulcer was suspected, but this was not confirmed at a later laparotomy. All these findings suggest that most of these hæmorrhages have arisen from some superficial lesion of the stomach which has been so acute as to fail to give any symptoms, or only to give them for a short time, and which has healed rapidly and left no trace capable of demonstration by X rays; we cannot, however, exclude the possibility of early cirrhosis and œsophageal varices.

Among these cases are two to which attention should be drawn:—

(1) A man, aged 55, with no previous history of indigestion had a blow on the abdomen due to falling across a plank. This was followed ten hours later by vomiting of two pints of blood, which was repeated the following day and again two days later. After that he made an uninterrupted recovery and the radiogram of his stomach was negative, although the fractional test-meal showed some delay in emptying, with a high acid curve.

(2) A man, aged 33, was having a course of N.A.B. when a purpuric rash appeared after the injection of 0·45 g. The rash persisted for five weeks when he vomited a considerable quantity of blood; after this the rash rapidly disappeared. At no time had he any indigestion.

SPLENIC ANÆMIA

Under this heading are grouped 14 cases in which there was enlargement of the spleen associated with hæmatemesis and no history or other finding to suggest primary cirrhosis. Of these cases 7 were men and 7 women; the age-incidence is lower than with ulcer, 9 occurring under the age of 30. The youngest was a girl of 14, while the 5 cases (3 male, 2 female) which were fatal were also under 30. One of the non-fatal cases had previously had a splenectomy performed and had ascites, and so in all probability there was a secondary cirrhosis; in one of the fatal cases a secondary cirrhosis had also caused ascites. The hæmorrhage in this group tended to be severe and persistent, and in several cases transfusion was required, though it was not always successful in saving the patient's life.

At autopsy there were obvious œsophageal varices in 4 cases, though the actual rupture was only observable in 2; in another the stomach was full of blood and the splenic and portal veins were found to be thrombosed, which may have precipitated the bleeding. In another case hæmorrhage occurred from a small vein 1 in. from the cardia underlying an acute gastric erosion, the spleen being markedly enlarged (30 oz.).

CIRRHOSIS

These were all men (10), of ages varying from 36 to 72. There were two fatal cases in men of 56 and 57. In only one was a post-mortem obtained; œsophageal varices were present but no actual rupture was found; there were, however, numerous acute ulcers in the stomach mucosa which might have accounted for the bleeding.

CARCINOMA VENTRICULI

Frequent small hæmorrhages are common in cancer but in 5 cases only did a severe hæmatemesis occur. Three of these died in hospital, one suddenly—apparently from heart failure—and one, a man of 32, following an operation undertaken for repeated hæmatemesis, on an original diagnosis of gastric ulcer. No actual erosion of a vessel was found but there were numerous focal hæmorrhages in a large malignant ulcer completely encircling the pylorus. A similar condition was found in the third fatal case: a man of 63 with only three weeks' history before his vomiting a pint of blood; here again no actual eroded vessel was found. The ages of the other cases were 52, 54, and 61 respectively.

TREATMENT

The routine treatment in the hospital has been purely medical and has not departed from the usual lines of morphia, temporary starvation with ice to suck, and later Hurst's diet. In some cases, particularly in those with repeated hæmatemesis, blood transfusion has been performed, but it is not possible to assess the utility of this form of treatment numerically as obviously only the most severe cases would have such treatment. Surgical intervention was only undertaken for hæmorrhage on four occasions; in three of these, including a case of carcinoma in a man of 32, there were fatal results. The indications for operation were as follows:—

(1) A man of 67 was admitted for indigestion of 9 years' duration and the radiogram showed a large gastric ulcer; there was also a high acid curve in the test-meal. While waiting transference to a surgical ward he had a severe hæmatemesis; he was operated on two days later, partial gastrectomy being performed, but he subsequently died. At autopsy the stomach was found to be full of blood which had apparently come from the gastro-jejunal anastomosis.

(2) A man of 29 was admitted for hæmatemesis and after a month's medical treatment was transferred to the surgical ward, where he had another severe hæmatemesis which was repeated on three occasions. A blood transfusion was given and gastro-enterostomy was performed for a large duodenal ulcer. The patient died 14 days later, and at the autopsy the sealed end of an artery was seen in the floor of the ulcer.

(3) A man of 32 was admitted after vomiting half a pint of blood on two occasions. He vomited five or six times while in hospital and did not appear to be responding to treatment; a transfusion was given and gastro-enterostomy was performed for a very large ulcer of the pylorus which was found at operation. The patient died two days later and at autopsy careful examination showed this ulcer to be malignant.

(4) This case recovered and was a boy of 17. He was admitted after vomiting a pint of blood, which was repeated once. He did well for three weeks until he had a further hæmatemesis, probably associated with a dietary indiscretion. He was at once given a blood transfusion, but five days later had a further hæmorrhage which necessitated another transfusion. A third was given before an operation a few days later which showed the intestines full of blood and a large anterior duodenal ulcer; this was infolded and gastro-enterostomy performed. He made an uninterrupted recovery.

One cannot help thinking that operation was premature in the first two, which would probably have recovered completely from the hæmatemesis if they had been left alone, and a radical operation for a permanent cure of the ulcer could have been performed when the patient was in a more suitable condition. The fourth case does seem to have benefited by the operation but we cannot say that he would not have recovered anyhow.

No discussion will be given here but reference is made to that of M. E. Shaw.[4]

CONCLUSIONS

(1) An analysis of 303 cases of severe hæmatemesis admitted to the Leeds General Infirmary is given; 202 were due to ulcer and 72 were of doubtful origin. (2) The mortality in cases where a diagnosis of ulcer could justifiably be made ante-mortem was 13·0 per cent. in men and 12·5 per cent. in women. (3) Attention is drawn to the frequency (14 cases) and severity of the bleeding in cases with enlarged spleens in the absence of any suggestion of primary cirrhosis. Five of these cases proved fatal. (4) Opera-

tion, where undertaken for hæmorrhage in cases of ulcer, has been associated with poor results.

I wish to thank the honorary physicians concerned for access to the notes of these cases.

REFERENCES

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2. Bulmer, E.: THE LANCET, 1927, ii., 168, and 1932, ii., 720.
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4. Shaw, M. E.: THE LANCET, 1933, ii., 335.

THE SYMPTOMATOLOGY OF INSULIN HYPOGLYCÆMIA

BY A. M. COOKE, D.M. Oxon., M.R.C.P. Lond.

HONORARY ASSISTANT PHYSICIAN TO THE RADCLIFFE INFIRMARY; MAY READER IN MEDICINE IN THE UNIVERSITY OF OXFORD

A CONSIDERABLE proportion of diabetic patients being treated with insulin have, at some time, attacks of hypoglycæmia which are a source of alarm and worry to themselves and to their medical attendants. It is not unknown for practitioners to remark that they do not like putting their patients on insulin treatment on account of the difficulties, or even dangers, of its administration. While it must be admitted that hypoglycæmic symptoms are often unpleasant to the sufferer, they are seldom dangerous, and a clear understanding of the early symptomatology by patient and doctor gives at once a sense of confidence and a means of anticipating the more serious manifestations. The well-known diversity of symptoms found in hypoglycæmia makes it important that as many types of reaction as possible should be recorded to aid in the diagnosis of the condition, whether due to insulin administration or arising spontaneously. Attention will later be drawn to two new symptoms, hitherto unrecorded.

A short account is given here of the various symptoms exhibited by a number of diabetics who have suffered from hypoglycæmia in the course of treatment. The cases were all out-patients, and, for the most part, showed only the earlier symptoms. The data were collected from the diabetic clinic attached to the Medical Unit at St. Thomas's Hospital and are published by permission of the director, Prof. O. L. V. de Wesselow.

A questionnaire was submitted to 179 consecutive patients, of whom 111 (62 per cent.) stated that they had had one or more attacks of hypoglycæmia. There was no appreciable difference in the incidence between the sexes; more attacks were noted among the younger patients. The symptoms appeared after the insulin injections at intervals of from one to twelve hours, the most frequent time being four hours; 53 per cent. of the reactions occurred at three and four hours and 74 per cent. at two to five hours. The attacks were not confined to any one part of the day, 52 per cent. occurred in the morning only, 38 per cent. in the evening only, and 10 per cent. in the morning and evening. The seasonal incidence showed more marked differences—summer 69 per cent., spring 18 per cent., winter 11 per cent., and autumn 2 per cent. Over 30 per cent. of the patients had noticed that exercise tended to bring on hypoglycæmic symptoms, and this fact doubtless accounts for the high proportion of cases occurring in the spring and summer.

The accompanying Table shows the symptoms which were observed and their relative frequency; the figure after each symptom indicates the number of cases in which it was observed, all the patients having as a rule several symptoms.

Symptoms associated with Hypoglycæmia

Sweating		82	
Weakness		74	
Tremor		73	
Visual disturbances—			
Amblyopia	43		
Diplopia	24	71	
Flashes of light	2		
Yellow vision	2		
Dizziness		67	
Incoördination of limbs—			
Arms and legs	19		
Arms only	5	41	
Legs only	17		
Headache		33	
Disorientation in time and/or space		32	
Unconsciousness*		30	
Paræsthesiæ		14	
Convulsions*		8	
Mental disturbances		8	
Hunger		7	
Auditory disturbances—			
Deafness	5	6	
Tinnitus	1		
Dysarthria		6	
Hot flushes		6	
Cold flushes		5	
Nocturnal enuresis		5	
Olfactory disturbances		3	
Palpitations		3	
Gustatory disturbances		2	
Dyspnœa		1	
Nausea		1	

* It will be seen that a surprisingly large number of the patients complained of the symptoms of "unconsciousness" and "convulsions," and it is probable that the well-known uncertainty of the average out-patient as to what really constitutes these conditions makes the numbers higher than is actually the case.

The general incidence of 62 per cent. is high, but in many of the patients, especially the younger ones, the dose of insulin required to keep them in good health is not far removed from that which will produce hypoglycæmic symptoms. Sonne has stated that, in a series of 50 patients, no less than 96 per cent. showed some evidences of hypoglycæmia when observed over prolonged periods. On the other hand, Oppenheimer, in a series of 1500 cases, found that in only 2·7 per cent. were the reactions at all serious. In spite of the enormous number of diabetics treated on insulin in the past 12 years, comparatively little has been added to the original clinical description of insulin hypoglycæmia given by Campbell and Fletcher in 1922. Two symptoms recorded here which are not referred to in the standard text-books or in such comprehensive reviews of the subject as those of Sigwald and Wauchope are yellow vision (two cases) and nocturnal enuresis (five cases). It is of interest to note that Lindquist has observed that in dogs insulin appears to have a specific effect on the urinary bladder, causing increased tone and motility, unrelated to convulsions or increased intra-abdominal pressure.

Treatment.—The only procedure which will alleviate the symptoms of hypoglycæmia is to increase the amount of sugar in the blood. The order of effectiveness of the various carbohydrates for this purpose is given by Campbell and Macleod as glucose, maltose, galactose, lactose, sucrose, lævulose, glycerin, and starch. There is no question that glucose is *by far* the most effective agent. The only other of these substances likely to be available in ordinary circumstances, sucrose and starch, are of value in mild cases, but where time is of importance or oral administration is not possible, they are practically useless. In mild cases, 10 to 50 *g.* of glucose by the mouth is convenient and adequate, but where the patient cannot or will not drink freely, the intravenous route should be used. Although isotonic solutions (5·5 per cent.) are usually advocated, solutions of greater strength (25 per cent., or more) can be given slowly with complete safety and are more convenient to handle as the smaller bulk permits the use of a large syringe rather than the more cumbersome infusion apparatus. If no suitable veins can be found, injection into the peri-femoral space can be employed. Rectal administration of glucose is uncertain on account of difficulties of retention and slowness of absorption, and it should seldom, if ever, be necessary to resort to it. The subcutaneous injection of adrenaline also has little to recommend it, as its effectiveness depends on the presence of an adequate store of glycogen in the liver—a condition

liable to be lacking in the diabetic. In any case, its action, although rapid, is transient.

Prevention.—Attention to diet and dosage of insulin is, of course, essential. In spite of the variety of manifestations seen in hypoglycæmia, it has frequently been observed that the initial symptom in any one subject is nearly always the same in successive attacks. Every patient, therefore, on being put on insulin treatment should be given a deliberate overdose as was advocated by the early Toronto workers. There is no difficulty or danger if the patient is under skilled observation in a hospital or nursing home. By this simple means the presenting symptom is made known to the patient and to his medical attendant so that in the future any insulin reactions can be recognised and promptly dealt with as soon as they appear. If this practice were carried out and if all diabetics were persuaded to carry glucose tablets or barley-sugar, the inconveniences and possible dangers of hypoglycæmia would be practically non-existent.

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THE POINT OF ENTRY IN TUBERCULOUS INFECTION

By Charles Cameron, M.D., F.R.F.P.S. Glasg.

MEDICAL SUPERINTENDENT OF THE SOUTH-EASTERN COUNTIES OF SCOTLAND JOINT SANATORIUM, EAST FORTUNE

With certain well-defined exceptions it happens rarely that the portal of entry of the tuberculous infection can be demonstrated, and the primary focus of disease rarely coincides with the site of entry of the bacillus. Cornet's law, that a primary lesion is produced at the site of entry in addition to a lesion in the tributary lymph glands, holds good on occasions only, for the bacilli as a rule effect their passage through mucous surfaces without leaving any trace of their point of entry.

The primary focus is seen par excellence in the primary lung complex (Ghon, Ranke) and, in rarer instances, in tuberculous lesions of the tonsil, although, as this structure belongs to the lymph system, disease in it is perhaps strictly a secondary manifestation. Be that as it may, actual tuberculous disease of the tonsil is far from rare, and, as the disease represents a holding up of the bacilli at their point of entry into the body tissues, it may be considered a true primary focus.

Enucleation of tonsils has been performed in 44 patients in this sanatorium. In 9 the tonsils were not examined. Reports of 7 have not yet been received. Of the remaining 28, in 7 (25 per cent.) histological examination revealed the presence of tuberculous foci. Six of these patients had caseating neck glands, the tonsillar group in all having the greatest area of disease. One had tuberculosis of the lumbar spine, and had intermittent swelling of the tonsillar glands. The ages ranged from 11 months to 13 years.

Calmette states that, despite the frequency of contact of the skin with infectious material (sputum and bacillus-containing excretions) cutaneous tuberculosis is rare; and, clinically, primary tuberculosis of the skin is not a common entity.

In the section of dermatology of the Royal Society of Medicine[1] Dr. Arthur Burrows (for Dr. W. J. O'Donovan) recently demonstrated a child of one year who had developed, at the age of three months, a patch of lupus on the left cheek, followed by swelling of the left preauricular gland, from which caseous material was evacuated by incision. The child's father had tuberculosis of the lungs.

"In this case," remarked Burrows, "we have a definite primary tuberculous lesion of the skin leading to the formation of secondary glands, and it is possible, as other cases have been observed elsewhere, that skin infection may more often be the cause of chronic tuberculous glands than is usually thought to be the case."

In the subsequent discussion Dr. H. C. Semon remarked on the rarity of the condition and referred to three cases reported in Germany. Dr. Hugh Gordon spoke of a published case of his own, and Dr. H. W. Barber referred to Lehmann's well-known publication of 10 cases of primary penile lesions, which followed circumcision by a phthisical rabbi.

Case 1. Photograph taken on July 3rd, 1934. The glandular sinus is now small and healing.

Holt, quoted by Calmette,[2] has collected from the literature notes of 41 similar cases, 17 of which to his knowledge ended fatally.

The object of this communication is to place on record details of two cases of primary cutaneous tuberculosis, one of which followed a scratch accidentally inflicted.

Case 1.—The patient, A. B. aged 21 months, was admitted to the sanatorium in December, 1933. During 1931 her aunt, C. D. aged 14½ years, was a patient in the sanatorium with advanced cavitary lung tuberculosis. She produced no sputum, but the X ray film confirmed the all too obvious clinical findings. She left the sanatorium in February, 1932, and died in August, 1933, in her own home, which was about one mile distant from that of her married sister, the mother of A. B. A brother (uncle of A. B.) has had a recent period of treatment in the sanatorium for lung tuberculosis (sputum T.B. +), and a married sister (aunt of A. B.) is at present in the sanatorium suffering from advanced abdominal tuberculosis. All of this tuberculous disease is on the mother's side, and A. B. has been a frequent contact of all of the infected members. Her mother and an unmarried sister who lives in the mother's household are, according to a statement made to me by the former, well. At the time of the accident to be described, this unmarried sister was in the habit of visiting and tending her dying sister, C. D.

In June, 1933, the unmarried aunt of A. B., while lifting the child in play, accidentally inflicted, with a dress buckle, a long scratch just above the inner side of her left knee.

[1] Proc. Roy. Soc. Med., 1934, xxvii., 715.
[2] Calmette, A.: Tubercle Bacillus Infection and Tuberculosis in Man and Animals, Baltimore, 1923.

The scratch healed quickly, but in about a fortnight broke down in its central area. This open area persisted, sometimes as a crusted and sometimes as a moist sore. In September, 1933, A. B. fell from a chair, the seat of which nipped her left groin and caused a slight bruise. On the following day a swelling appeared in the groin, and by December a glandular abscess had formed. She was then sent to the sanatorium. The case notes made at that time state that "a small weeping vesicle like a herpes vesicle is present above the inner condyle of the left femur, and a large glandular mass occupies the left groin (oblique group of glands). The mass has softened, and an abscess has involved the skin." The Mantoux (1–1000) reaction was + + +.

No reference was made in the history, as given by the parents, to the presence of the vesicle, and its significance was only realised three months later when the vesicle had developed into a typical patch of lupus. The complete history was then obtained.

Meantime the glandular abscess had been incised and a large quantity of caseous material evacuated. Healing is now in progress, but the patch of lupus is spreading. Small glands can be felt in her axillæ and in her posterior neck areas. In appearance she is now a happy, healthy child.

Pus from the glandular abscess was examined microscopically after the incision. No organisms of any kind were found. No attempt at culture was made.

CASE 2.—The clinical outline of this case is less clear-cut, but the case appears to me to be definitely one of infection via the skin.

E. F., aged 5½ years, was admitted to the sanatorium on July 7th, 1934, suffering from tuberculous disease of the right hip-joint. She lived next door to a tuberculous family, well known to us, one member of which died, at the age of 16, in the sanatorium of advanced pulmonary and renal tuberculosis, having in his earlier years been successfully treated by us for multiple lupus lesions. One younger member has skin lesions, but has not passed through our hands. Another died at home some years ago of abdominal tuberculosis. Contact with this family has been intimate. The children of the two households went to school together, and helped one another with their evening lessons.

About six months ago E. F.'s mother noticed what looked like a soft wart on the right palm at the base of her (E. F.'s) right thenar eminence. At this time she was in excellent health. The wart was painless and little attention was paid to it. About a month after its appearance it became painful, and fomentations brought away a discharge of pus, which left an open centre which has healed and discharged intermittently since. About four weeks after the discharge appeared, swelling of glands in the upper part of the left side of her neck took place, and two months later—i.e., some four months after the warty mass appeared—the right hip-joint became painful. The child was now definitely failing in health, and her admission to the sanatorium was arranged.

She had then definite tuberculous disease of her right hip-joint. The left tonsillar gland was enlarged to the size of a bean, and several glands of the size of peas were present in the upper third of the left posterior triangle. Smaller glands were present along the posterior border of the right sterno-mastoid muscle and in the right axilla. In the right palm, at the base of the right thenar eminence, there was a depressed scar of irregular contour, with a pink and slightly moist base, measuring approximately ½ by ¼ cm. The scar was surrounded by an indurated margin, scaling in areas, and containing five tiny warty masses, each containing pus below a hard horny cap. I had little doubt of the tuberculous nature of the condition. The Mantoux (1–1000) reaction was + + +.

The course of events in the second case is less clear, as the glandular distribution is more suggestive of a buccal or pharyngeal route of infection. The history is, however, sufficiently striking to justify publication. It is of interest that the child's mother, an intelligent woman, has been quite convinced of the tuberculous nature of the palm lesion on account of its resemblance to certain lesions in a member of the neighbouring family.

THE HISTIDINE TREATMENT OF PEPTIC ULCER

WITH A NOTE ON FIFTY-TWO CASES *

BY ERNEST BULMER, M.D., M.R.C.P. Edin., M.R.C.P. Lond.

ASSISTANT PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM; HONORARY VISITING PHYSICIAN TO THE CORBETT HOSPITAL, STOURBRIDGE

THE treatment of peptic ulcer constitutes a problem lacking, as yet, an ideal solution; the last few years have seen greater coöperation between physician and surgeon, with a more critical appreciation of the indications for surgical treatment. Adequate medical treatment, it is increasingly said, is usually satisfactory; but if by adequate medical treatment is meant that counsel of perfection—a month in bed with careful dietetic, drug, and nursing control—it is obvious that it can only be obtained by the few.

In my own hospital practice there is a turnover of 1300 new out-patients annually, and during the last five years there has been an average of 130 patients suffering from peptic ulcer presenting themselves each year. In order to give them adequate in-patient treatment 11 beds would have to be set aside for this purpose alone. I have computed that for the whole of the medical out-patient department (of which my own is but a part) 45 beds would be needed, and this does not take into account those who are admitted without attending as out-patients. Ulcer cases would occupy one-third of the adult medical beds; they would constitute a quarter of the total medical in-patients, and their stay in hospital would be 50 per cent. longer than the average duration of stay. Figures such as these require no elaboration, and they must be a fair sample of the experience of other centres.

It has been my practice during the last few years to use a simple dietetic and alkaline treatment which the patient did his best to carry out at home, and in-patient treatment was of necessity reserved for the failures and for those who seemed to need surgical treatment. The imperfections of this arrangement are clear; they are such that experimentation with ambulatory treatment was justifiable, and it was decided to undertake the treatment of a series of cases by means of histidine injections, a method introduced by Aron, and based on experimental findings.

This is a preliminary report, and in it will be given the more or less immediate results; favourable as they may seem, it must be emphasised that several years' work will be entailed before final conclusions can be reached. My investigation of this method of treatment continues, for it seems important that a critical analysis of a large, consecutive series should be made in view of the scattered, but usually favourable, reports from continental clinics and from those who have drawn conclusions from the observation of but few patients.

Peptic ulcers of the large, callous, or penetrating type appear to be sufficiently rare to be excluded in a consideration of the main problem; the commonly encountered condition is characterised by a relapsing course, with a seasonal aggravation in spring and autumn, and an undoubted tendency to spontaneous remission with or without disappearance of the

* In this study the histidine used was Larostidin brand histidine, kindly supplied to me by the Hoffmann-La Roche Chemical Works, Ltd.

radiological signs. An appraisal of the results of treatment must therefore take note not only of the immediate results—this is a matter of a few months—but also of the effect upon the incidence of relapses; and this will require some years to accomplish.

THE PARENTERAL TREATMENT OF ULCER

Parenteral treatment is widely used, and a critical review of it is not intended. A number of methods have been recorded, but in many of them other and more orthodox treatment has at the same time been employed, so that a controlled experiment has frequently not been achieved. A few of the more important may be mentioned.

Pepsin.—Glaessner [1 2] has used a specially prepared sterile pepsin given in courses of thirty subcutaneous injections twice yearly: he has treated a thousand cases, some in hospital and some ambulatory. He records subjective and objective cure in about two-thirds, but as his patients have had a special dietetic régime, olive oil before meals and a bismuth preparation after meals, it is difficult to evaluate the rôle of the pepsin injections. The treatment is at present being used extensively in France.

Sodium benzoate.—Melocchi [3] states that injections intravenously of a solution of this substance have a specific antipeptic action and diminish the proteolytic power of the gastric juice; he treated 17 patients, but they were all kept at rest in bed and had a special diet; 8 were presumably cured and 8 much improved. A strict régime without sodium benzoate might have achieved a similar result.

Non-specific protein.—Martin [4] used intramuscular injections of milk protein (Aolan) given on alternate days, avoiding a febrile reaction. Most of his patients were at work and on their usual diet. Of 95 patients, 78 per cent. were greatly improved or clinically cured; after 1–4 years he followed up his cases and found of 60 who were traced that 60 per cent. of them were clinically cured or greatly improved.

Other methods.—Other parenteral injections, usually of a protein nature, have been tried but not in convincing numbers.

HISTIDINE

Aron and Weiss [5 6] repeated the manœuvre of Mann and Williamson for the production of experimental gastric ulcers in dogs: this consists of diverting the pancreatic juice and bile into the terminal ileum by resecting part of the duodenum, anastomosing the distal end with the terminal ileum, and closing the proximal end of the loop—the continuity of the stomach and the remainder of the duodenum being restored by an end-to-end anastomosis. In all the dogs after 10–28 days a peptic ulcer was produced in the stomach or jejunum; the animals became cachectic and anæmic, and developed profuse diarrhœa; ultimately they died of emaciation.

Whilst the cause of the production of the peptic ulcer is disputed, Aron ascribes it to a profound digestive upset. Food is subjected only to gastric and intestinal digestion; duodenal digestion is absent because there is no enterokinase in the colon to activate trypsinogen; and the bile causes such diarrhœa that the duodenal juices are rapidly expelled. Hence the digestion of all foodstuffs—and especially of protein—is interfered with. Aron, therefore, assumed the possibility of amino-acid deficiency and tried the effect on dogs of the parenteral administration of these substances. Lysine had no effect, tryptophane and histidine could prevent ulcer-formation, and histidine itself could prevent the evolution of ulcer although the dogs still died, but without melæna.

In this work Aron used intramuscular injections of 5 c.cm. of a 4 per cent. solution of histidine hydrochloride: histidine is an amino-acid indispensable to growth and weight preservation, it cannot be synthesised in the body owing to its imidazol nucleus, and it is the precursor of carnosine and histamine.

Aron treated, either with histidine or histidine and tryptophane, 17 cases of peptic ulcers: in all his cases the symptoms disappeared after a few injections, but the radiological signs in many persisted. He has also had a further series, too recent to report upon. He claims a rapid disappearance of vomiting and pain: the general condition improves; intestinal hæmorrhage is rapidly checked; and there is little effect on gastric acidity. The X ray changes are variable—recent ulcers disappear, the callous ones persist. In his oldest cases the periodic crises did not come back at their usual time.

Bogendoerfer [8] reports satisfactory results in 30 cases.

AUTHOR'S OBSERVATIONS

Since February, 1934, a study has been made of histidine treatment in 52 cases of peptic ulcer, and there has been no selection except when distance made treatment impracticable. So far as possible histidine has been the sole treatment, and except in 3 cases (one treated in bed at home and two admitted to hospital for study) the treatment has been ambulatory; no instructions about diet have been given, and no medicines ordered. Additional treatment could not be completely avoided, for many of the patients are accustomed to diet themselves and to take an alkaline powder; but such treatment was haphazard and does not seem to be a source of serious error in the interpretation of the results. A number of the patients remained at work and special arrangements were made at the hospital to enable them to have injections during their leisure hours.

In all but one patient X ray control was available; radiography was carried out before treatment, immediately after its termination, and at intervals afterwards. A recent follow-up has been successful in all but three cases which could not be traced, and most of the patients have been radiographed again before the assessment of the results as set out below.

Treatment consisted of the daily intramuscular injection for three weeks of 5 c.cm. of a 4 per cent. solution of histidine: local and general reactions were not met with, and in two cases 20 c.cm. were given daily for three weeks without demonstrable ill-effects.

Three patients require special mention. One, a man who had previously had two gastric operations and numerous courses of medical treatment, had in-patient treatment with histidine and developed during the period of treatment an attack of melæna which threatened his life; later a chronic unhealed duodenal ulcer was found at operation. Two other patients were operated upon after unsuccessful treatment: in one an unhealed gastric ulcer was found, and in the other no lesion could be discovered in spite of an abnormal radiogram and persistent symptoms. This case has been placed amongst the failures.

In the accompanying Table the results are given under two headings: the "immediate results" are assessed as soon as treatment has finished, and the "later results" after the follow-up of all treated cases. Under a third heading are given those excluded from the "later results" because they are too recent—treatment having been completed within the last two months. No conclusions can be drawn as yet from the later results.

The total duration of gastric symptoms has been noted, and whilst the failures show the longest

duration, a successful result was nevertheless obtained in some of long duration.

Table showing Immediate Results

(Total cases, 54. Treatment completed, 52. Under treatment, 2)

Group A. — Symptom-free with normal radiogram .. .. 30 (d.u. 8, g.u. 22)
Duration of symptoms: 2 weeks to 8 years. Average 2 years.

Group B. — Symptom-free with abnormal radiogram .. .. 10 (d.u. 3, g.u. 7)
Duration of symptoms: 2 weeks to 5 years. Average 2 years.

Group C.—Failures .. .. .. 12 (d.u. 6, g.u. 6)
Duration of symptoms: 4 weeks to 9 years. Average 4½ years.

FOLLOW-UP (total cases, 36)

Group A.—{Still symptom-free ..} 15; relapsed 3; untraced 1
„ *B.*—{ „ „ ..} 7; „ 0; „ 1
„ *C.*—Still failures .. 7; improved 1; „ 1

TOO RECENT (total cases, 16)

Group A.—{Symptom-free with ..} normal radiogram .. 11
„ *B.*—{ „ „ ..} abnormal radiogram .. 1
„ *C.*—Failures 4

SUMMARY

The difficulty of adequate treatment of peptic ulcer cases is illustrated, and some of the methods of parenteral treatment are outlined. A review of the literature of histidine treatment is given, together with a preliminary note on the ambulatory treatment of 52 cases. It is hoped to analyse the ultimate results later.

The immediate results of histidine treatment, if expressed in percentages, are: (*a*) 58 per cent. of symptomatic cures with disappearance of the abnormal X ray findings; (*b*) 19 per cent. of symptomatic cures with persistence of some radiological abnormality; (*c*) 23 per cent. of failures. In a follow-up three patients relapsed, and one of the apparent failures improved—the cases of gastric ulceration seemed more amenable than those of duodenal ulcer, and those with a shorter history tended to react more favourably than those with a longer history.

Owing to the natural vagaries of peptic ulcer, and the tendency to spontaneous remission, final conclusions have not been drawn from this study. Nevertheless the results seem to be better than those of the more orthodox methods and quicker of achievement, whilst treatment on ambulatory lines has much to commend it.

My thanks are due to my colleagues in the X ray department of the General Hospital, Birmingham—Dr. Harold Black and Dr. C. G. Teall—for much extra work that this study has entailed, and to Miss Carte, of the medical records department of the hospital, who has been responsible for the clerical work and for the repeated following-up of the patients.

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Clinical and Laboratory Notes

A CLINICAL SIGN OF MALIGNANT DISEASE OF THE LUNG

BY WALTER BROADBENT, M.D. Camb., F.R.C.P. Lond.
CONSULTING PHYSICIAN TO THE ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON

IN several cases of malignant disease of the lung I have been greatly helped in the diagnosis by hearing the heart sounds conducted to abnormal parts of the chest by the tumour. A patient I saw this summer, who had in the past had several attacks of broncho-pneumonia on the left side, had what seemed to be an attack in the spring, which did not clear up, and a cough and often a temperature of 100° at night persisted. The lower two-thirds of the left back were dull and breath sounds very weak, but heart sounds were quite loud over a large area in the middle of the left back, and vocal resonance was almost inaudible. Last year, in a similar case, I heard heart sounds in front almost out to the right anterior axillary line. Some time ago in a patient weighing 16 st. with slight hæmoptysis the hearing of heart sounds in the right third space for two inches from the sternum, with much diminished breath sounds and vocal resonance, enabled me to make the correct diagnosis of malignant disease.

The heart sounds seem to be conveyed when the tumour is in contact with the heart; they are not heard when the growth is in the upper lobe or in the outer part of the lower lobe. At the same time vocal resonance is very much reduced or abolished because of the blocking of the bronchial tubes.

AN UNUSUAL COMPLICATION OF A FRACTURED PATELLA

BY J. R. MURRAY, M.B. Lond., D.P.M.
ASSISTANT MEDICAL OFFICER, CLAYBURY MENTAL HOSPITAL, WOODFORD BRIDGE, ESSEX

THE patient, a man aged 48, suffers from a delusional psychosis of many years' standing. On the morning of June 13th of this year he was involved in a fracas with another patient in the course of which he fell to the ground. He broke his fall by clutching a piece of furniture which struck against his head, bruising it. Although it was established that his knee received no direct violence, on examination he was found to have a fracture of the right patella. This was of the type usually found in cases where the bone has been broken by muscular action—i.e., it was a complete transverse break across the bone with wide separation of the fragments.

The leg was put to rest on a back-splint with foot-piece; no side-splints were used. Two days later, when the preliminary swelling had subsided, I operated on the knee and approximated the fragments with silver wire. During the operation no tourniquet was used and at its close the patient was returned to the ward with the leg bandaged, but not tightly, to the back-splint. The bandages were again inspected on the following day and were not found to be unduly tight. On the second day after the operation the splint was removed and the leg was immobilised between sandbags. As soon as the support of the foot-piece was removed, and before the use of the sandbags, the patient was noted to have foot-drop. The foot was supported and local massage was begun at once. The

operation scar healed by first intention and the local condition was satisfactory. Foot-drop, however, persisted and the electrical reactions when tested three weeks after the accident showed reaction of degeneration in all the muscles supplied by the external popliteal nerve except the peronei. The patient was too unreliable to give any account of sensory changes. Constant massage and electrical treatment were persevered with over a period and some improvement in voluntary power noted. An X ray photograph showed the absence of any fracture of the head of the fibula, and the fragments of the patella in good condition.

At the time of writing, five months after the accident, the condition is as follows. There has been considerable, but not quite complete, return of voluntary power in the limb. Complete reaction of degeneration is still present in the tibialis anticus, but there is a slight faradic response in the extensor longus hallucis. The anatomical result of the wiring is excellent and the man has full flexion of the knee-joint.

Foot-drop was not present before the accident. During the subsequent operation the incision did not encroach upon the area of the nerve. The absence of any injury to the head of the fibula which might have caused internal pressure on the nerve, and the absence of any source, such as tourniquet or splints, of external pressure, suggests the injury may have been caused by the same indirect violence which fractured the bone. In the absence of any other theory to explain the facts, the literature concerning fractures of the patella was searched in the hope of finding an account of a similar case but without success.

ON THE USE OF DIOXANE FOR TRANSFERENCE OF TISSUES DIRECT FROM WATER TO PARAFFIN WAX

By A. Weissberger, Ph.D.

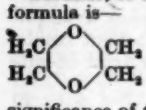
J. Z. Young, M.A.
Fellow of Magdalen College; and

H. M. Carleton, M.A., B.Sc., D.Phil.
Research Fellow of New College

(From the Departments of Organic Chemistry, Zoology, and Physiology, Oxford)

The use of dioxane as a substitute for both alcohol and clearing reagents preparatory to paraffin embedding has recently been advocated by Weissberger and Graupner in two short notes.[4,5] Weissberger's suggestion has been tested and extended by us on a variety of tissues, and we found it so valuable as to be worth describing for the benefit of English workers.

Dioxane, or diethylene dioxide, is a cyclical ether, whose formula is—

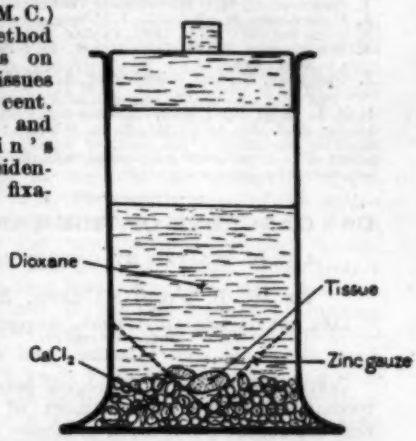


It is a clear, colourless fluid boiling at 101° C. and freezing at 11·67° C. It mixes readily with alcohol, water, and molten paraffin wax, and the essential significance of this for both the pathologist and histologist is that a single process can be substituted for the various stages usually employed for dehydration and clearing.

The procedure is as follows. The tissues, having been fixed, are transferred from the fixative direct to pure dioxane, contained in a well-stoppered slide or specimen jar on the bottom of which a few granules of *anhydrous* calcium chloride or sodium sulphate have been placed (see Figure). A piece of surgical, or still better, zinc gauze can be used to separate the tissues from the dehydrating agent. Strictly speaking, it is not the tissues which are dehydrated by the dioxane, but the latter by the calcium chloride. The shrinkage produced by this method is not excessive, since the molecular weight of dioxane is not high, its molecule is relatively compact and it is not associated; therefore the difference between the diffusion rate of water from the tissues and its replacement by the organic solvent is less than when material is transferred direct from water to a high-grade alcohol.

The duration of treatment in dioxane naturally varies both with the thickness and consistency of the tissues. Small and thin pieces become water-free in from 2–3 hours, while pieces of large surface area but not thicker than 2–3 mm. have been found ready for embedding after treatment overnight (say 12–15 hours). The transference to paraffin wax is made through a mixture of equal parts of dioxane and wax as an intermediary, tissues being placed in this for one-half to one hour in the embedding oven. Embedding calls for no special comment, except that much time may be saved if the vacuum method advocated by one of us (H. M. C.[1]) be employed.

The dioxane can be used several times, or the once-used fluid can form a preliminary bath for subsequent specimens.



One of us (H. M. C.) tested this method against controls on pathological tissues fixed in 5 per cent. formaldehyde and Heidenhain's "Susa" (Heidenhain[2,3]). After fixation each block was bisected, one half transferred direct to dioxane and the other dehydrated in ascending grades of alcohol (in the formol-fixed series beginning at 50 per cent.) and cleared in benzol. No difference either in shrinkage or staining reaction could be detected between the two series.

It should be noted that dioxane was particularly effective after fixation in "Susa." But after other fixatives also both the absence of shrinkage and the ease of sectioning were remarkable. Further, much time is saved by the "Susa"-Dioxane technique. Normally tissues are transferred direct from this fluid to 96 per cent. or absolute alcohol tinted with iodine in order to remove any mercury deposit. Thence, after a second bath of absolute alcohol, to the clearing fluid. With dioxane, however, tissues may be placed direct in it after fixation. A few flakes of iodine are added to the dioxane, and thus removal of the mercury precipitate, dehydration and clearing are simultaneously effected by a single process. Excellent results have also been obtained (H. M. C.) after fixation in mercuric chloride-formol and Zenker-formol. In the latter case the tissues were washed overnight in running water, as potassium bichromate is insoluble in dioxane.

Dioxane is now being used as a routine in the preparation of sections both for students in histology and for research work.* It has also been tested for general zoological and embryological purposes (J. Z. Y.). Whole heads of larval lampreys fixed in Bouin's fluid were found to cut readily into serial sections after dehydration overnight in dioxane. The gonads of lampreys were also treated, and the mitotic figures and stages of gametogenesis appeared as clearly as in material dehydrated in alcohol. The method has been found particularly useful for the routine investigation of large amounts of experimental

material, since it so greatly reduces the number of operations necessary for embedding. In fact the cardinal advantages of the use of dioxane are speed and simplicity. With a rapidly acting fixative such as Susa, Bouin, or corrosive-acetic, small and thin pieces of tissues can be embedded in wax and sectioned 2–4 hours after fixing; larger pieces within 24 hours. Moreover, one is free from the tiresome drudgery of changing alcohols and clearing fluids at stated intervals.

One word of warning: dioxane vapour is toxic and casualties have occurred after its inhalation over prolonged periods under industrial conditions. Vessels containing it should therefore always be well stoppered and the used product thoroughly flushed down the sink.

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2. Heidenhain, M.: Zeitschr. f. Mikros. Anat., 1916, xxxiii., 235.
3. Same author: Ibid., 1917, xxxiv., 232.
4. Weissberger, A., and Graupner, H.: Zool. Anzeig., 1931, xcvi., 204.
5. Graupner, H., and Weissberger, A.: Ibid., 1933, cii., 39.

* The cost of suitable samples of dioxane we found to vary from 7*s.* to 9*s.* the pound. Melting-point estimations were very kindly made for us by Mr. R. B. O'Brien; he found that our samples contained 5 per cent. of water. Provided the stock solution is kept over anhydrous calcium chloride or sodium sulphate, this does not matter.

GAS GANGRENE OF THIGH AND BUTTOCK

A CASE TREATED BY OXYGEN IRRIGATION

By W. B. Fiddian-Green, B.M. Oxon.

LATE JUNIOR MEDICAL OFFICER, RANDFONTEIN ESTATES GOLD MINING CO.

Infiltration with hydrogen peroxide has been recommended in the treatment of gas gangrene[1] and the recent publication of a case of gas gangrene of an amputation stump treated by infiltration of afflicted tissue with 1/500 potassium permanganate solution[2] makes the following case, treated four years ago, of interest.

History.—A Pondo boy, about 22 years old, was admitted to the Randfontein Estates Gold Mining Co. Native Hospital on Sept. 5th, 1930, with contusion of the right buttock caused by a fall of timber. He had as well a small infected wound of the right elbow. On the day after his admission his temperature rose to 102° F., and on the following day a large hæmatoma of his buttock was incised and thin blood-stained pus obtained. On Sept. 8th his temperature was 103°, so he was given 100 c.cm. antistreptococcal serum intravenously in four 25 c.cm. doses at two-hourly intervals. At this stage the infection had spread rapidly and the whole of the right thigh and buttock was swollen and fluctuant.

Operation and subsequent course.—On Sept. 9th multiple incisions were made in the thigh from knee to buttock and thin pus was obtained. A further 100 c.cm. antistreptococcal serum was given intravenously, and this was repeated on Sept. 10th, the wounds being irrigated continuously with eusol by Carrel-Dakin tubes. The pus was sent for examination to the South African Institute of Medical Research and the report stated that hæmolytic streptococci were cultivated.

The temperature dropped to 99° on Sept. 12th, but rose to 103° next day, when the thigh and buttock presented a very swollen appearance; crepitus of muscle could be obtained and bubbles of gas could be expressed from the wounds while the characteristic smell of gas gangrene was present. The boy at this stage was acutely ill and little hope for his recovery was held. He was given 50 c.cm. anti-gas gangrene serum (containing *Bacillus perfringens*, vibrion septique, *B. sporogenes* and *B. histolyticus*) intramuscularly, and the wounds were kept on continuous eusol irrigation. Stab-cultures were sent to the South African Institute of Medical Research for examination, and the report stated that *B. welchii* (*B. perfringens*) and *B. coli* had been cultivated.

Oxygen irrigation treatment.—On Sept. 16th his condition was very grave; his temperature was remittent, reaching 104° at times and never dropping below 100°, the thigh and buttock were very swollen and discharging freely, and the muscles soft and putrefying. As he had in no way reacted to the anti-gas gangrene serum, the eusol irrigation was discontinued and oxygen irrigation commenced. Three Carrel-Dakin tubes were inserted into the wounds, and so connected up that the whole buttock and thigh was subjected to a continuous stream of oxygen from a cylinder, led over water at the rate of about 120 bubbles a minute. This stream of oxygen was kept going day and night. The temperature remained intermittent, but gradually fell until it was normal on Sept. 25th. The muscles looked healthy and the swelling decreased. The boy's general condition had much improved. The temperature rose again on Sept. 26th, but on the 30th it became normal and remained so. At that date the limb had ceased to smell and the discharge had lessened. The muscles instead of being swollen and putrid were red, healthy, and shrunken. The skin was loose upon the muscles of the thigh and buttock, so that there was a communication subcutaneously from knee to buttock. The edges of the incisions themselves were granulating.

The oxygen was discontinued on Oct. 3rd and four-hourly eusol irrigations commenced to aid the closing of the sinuses. The boy's appetite was good, tongue clean, and all signs of toxæmia gone. He was given iron, arsenic, and strychnine. The wounds healed up quite readily and movements were quickly regained. Within two weeks of discontinuing the oxygen he was walking about on crutches and when last seen, at the end of October, he was walking with the aid of one crutch, and apart from flexion of the knee being limited to 15° he was perfectly well. He was discharged from hospital and repatriated.

The *B. welchii* infection in this case had spread rapidly right up to the buttock, leading to so severe a toxæmia that the boy was not expected to live. While it must be admitted that the anti-gas gangrene serum may have reduced the toxæmia, this was not noticeable. Furthermore, only one injection of the serum was given, and the improvement following the commencement of the oxygen was most marked. In this case it was attempted as a last resort—amputation being out of the question—without previous experience, on the assumption that if the tissues could be infiltrated with oxygen the growth of anaerobic organisms might be arrested and toxæmia reduced, when further surgical intervention if necessary might be considered. As it happened the result was very gratifying and no further treatment was necessary.

A second, though milder, case of gas gangrene of the palm (no notes available) from which *B. welchii* was cultivated, gave similar results.

Although it is impossible to draw conclusions from two cases and no further cases have been available for treatment, the method gave such excellent results that it would commend itself to further trial despite its obvious expense.

I am indebted to Dr. P. A. Peall, senior medical officer, Randfontein Estates, for permission to publish this case.

Matatiele, East Griqualand, South Africa.

[1] Wheeler, Sir W. I. de C.: Med. Annual, Bristol, 1934, p. 193.
[2] Warnshuis, F. C., and Kolk, B. V.: Jour. Amer. Med. Assoc., 1934, cii., 1757.

HOSPITAL WAKING HOURS.—Following the recommendation of King Edward's Hospital Fund that the most suitable hour for waking patients is 6 A.M., only 15 per cent. of the total number of patients in the London voluntary hospitals are now awakened at an earlier hour. (In 1931 the percentage was 53.) The reasons adduced for earlier wakening are to be examined by the visitors of the fund at the next annual inspection.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

At a special meeting of Fellows held on Nov. 29th, with Dr. ROBERT HUTCHISON, the president, in the chair, Prof. G. R. MINOT, of Harvard University, delivered an address on

Some Aspects of Anæmia

He said that the tendency in recent years when confronted with a case of anæmia was for the physician to decide at once that iron and liver were indicated, and often these were prescribed before the particular patient's defects had been properly investigated. Especially had there been a tendency to forget that proper therapy depended on an understanding of the mechanisms which produced anæmia, and the great importance of a correct diagnosis. Many cases of anæmia could be attributed to defective or deficient nutrition, and this nutritional defect could arise in ways other than from a deficient diet. A multiplicity of factors might be responsible, indeed a depletion of any of the sources of material needed for blood building. The disease in man was unlike that experimentally produced in the laboratory animal, for in the latter was produced only one deficiency at a particular time. In man there might be damage to any organ of the body, to the cardiovascular apparatus, including arterio-sclerosis, and so on, and it was necessary to ascertain the defect and the cause of it in each case, so making an individual study of each patient essential.

The principle carried out, stated briefly, was replacement treatment on a quantitative basis. Attention must be devoted to treating the complicating factors, and in treating the anæmia per se one must not forget the patient himself. In considering pernicious anæmia it must be realised that it consisted of more than disease of blood-forming tissues; it involved the central nervous system and the gastro-intestinal system, and the treatment must aim at improving both of those systems. Diagnosis must therefore include the use of the stomach-tube and the use of the tuning-fork. Also, the blood examination must include measurement of the cell volume, and possibly diameter by means of the Price-Jones curve. Lack of gastric secretion and lack of some essential food factor, such as meat muscle, might both be ætiological factors. In Addisonian anæmia there was always a deficiency in gastric function. Certainly an important factor in the causation of anæmia was an inability to absorb and utilise substances eaten. It was not yet known exactly what liver extract was, as the exact nature of its components had not been identified. If the basic substance was lacking, especially in sprue and in pregnancy, it might be due either to defective food or to a failure in the gastric function. Absorption was difficult also in cœliac disease, and a relapsing anæmia might arise from complete removal of the stomach, and from anastomosing and short-circuiting operations on the small intestine.

Was there any such thing, Prof. Minot said, as disorder of internal metabolism of the liver? It was conceivable that some of the macrocytic anæmias might be due to such a condition, though of that the lecturer had no evidence. A deficiency in absorption was intimately associated, in many cases, with achlorhydria; or the deficiency might be due to the material in the intestine being hurried along too quickly, or to diarrhœa. In anæmia there was a want of blood-building material, and in such a condition as pregnancy there existed an extra demand, in the form of the fœtus, who required, for instance, extra iron, which might dangerously deplete the mother's supply. There was a very wide zone which could be spoken of as partial deficiency, and if a person continued in that zone for a long time he would get nearer and nearer to, and finally be a case of, actual deficiency disease, with a clear-cut symptomatology like that of scurvy. If a person on the upper zone of nutrition picked up an infection it would take him to the lower zone, and the transit into distinct deficiency would be rapid.

TWO MAIN CONSIDERATIONS

In the production of all anæmias there were two main considerations: the character of material ingested by the mouth, and the state of gastro-intestinal function. If only one of these was at fault the patient might go along fairly well, but if both were markedly defective the case would be one of definite deficiency disease. There might be some inhibitory factor at work in the utilisation of the nutrition taken in by the mouth, some of the organs and tissues concerned might be abnormal. Even after the body had manufactured sufficient hæmoglobin, it might lose it by a chronic blood loss, a result similar to that from taking food with an inadequate content of iron. He had been interested in making an inquiry into how long it took to diagnose pernicious anæmia. In a large series it took, on an average, one and a third years to arrive at a diagnosis once the symptoms had become established. When there was in addition a gastro-intestinal lesion, the time taken for the diagnosis was over two years, and when there were nervous complications it took over a year. Yet in many of the cases there was such a definite condition of anæmia that it practically stared the physician in the face, and so the diagnosis ought to have been arrived at quickly. It was especially important to make an early diagnosis in patients who had cord lesions. In these, much unnecessary suffering would have been avoided if a recognition of the character of the illness had been made before the nerve symptoms became more than slight. Many patients with pernicious anæmia gave a long history of previous indigestion. Ill-defined symptoms referable to the small intestines were quite common; in some these symptoms had dated back as long as 20 years; others had had recurring "bilious attacks," nausea, epigastric discomfort, and in an important proportion there was a gall-bladder symptomatology. In 23 per cent. there was proved to be gall-bladder trouble. If a case did not clear up pronouncedly on liver treatment it was probable that gall-stones or chronic cholecystitis were complicating factors. In a series of cases the spleen was found to be palpable in about 35 per cent. The occurrence of other conditions, such as carcinoma of the stomach, sometimes would upset the diagnosis. An interesting question arose as to whether there was a greater incidence of malignant conditions among people who had pernicious anæmia than among the mass of the population. He had not yet worked out the full statistics, but there was no evidence that cancer was more frequent among people suffering from pernicious anæmia, age for age. Myxœdema among pernicious anæmia patients was not common, nor was it very rare. Many papers had been written seeking to show a coincidence between diabetes and pernicious

anæmia; in nearly all the quoted cases the diabetes had been a supervention some years later than the onset of the anæmia. Thirty of a hundred cases of pernicious anæmia had, symptomatically, some chronic arthritis, indeed some had it a considerable time before they were found to be suffering from anæmia; that was partly due to lack of appreciation of the cord symptoms by some physicians, and partly because the arthritis was so prominent that nothing else was seen in the picture. Many had thought the blood state was a secondary consequence of the arthritis, instead of recognising that the main condition was the pernicious anæmia.

If failure was met with after liver treatment, he thought it meant either that the treatment had been inadequate in quantity, or that the patient suffered from a condition, such as infection, sufficiently severe in itself to lead to a fatal issue.

A rare condition, refractory to liver treatment, which was now being studied by Prof. Minot's colleagues and himself was, so far, a puzzle. Three patients had shown a macrocytic anæmia, with a normal amount of hydrochloric acid in the stomach; and no leucopenia, in contrast to the so-called chronic aplastic anæmia; tongue and spinal cord symptoms were also absent. The patients had lived, so far, three years, and liver had no effect on them, nor had any other therapy known to him. One case at autopsy showed red marrow and there was no outstanding disease of the liver.

MAINTENANCE TREATMENT

The modern treatment problem was not so much how to get the patient over the more severe symptoms, but, rather, how to determine the best maintenance treatment for each particular patient; the great aim must be to keep the patient in as good a state of general health as possible. The reservoirs of his body must be filled up, and the treatment and care thereafter must be the optimum. Obviously, as one was treating the individual patient, there could be no such thing as standardisation in treatment. He was quite sure that the prescribing of arbitrary amounts in a general way had been responsible for a great deal of unnecessary illness. Each patient must be given a sufficient reserve to meet all likely demands. Probably it took more to prevent the progress of neural lesions than it did to permit a maintenance of the blood elements at a healthy level. The question of what could be done for the neural lesions was one that had been a good deal debated. The idea of what was possible should not be based on the degree of improvement, but on the evidence available that the process had been arrested. Sepsis exercised a deleterious effect, as it inhibited the effect of liver extract on the cord. When reading reports of unfavourable results of treatment in the disease it was not difficult to see that there was a widespread failure to recognise that there was no standard dose applicable to all cases. And it must be remembered that the different preparations of liver used and advertised throughout the world differed widely in merit, strength, and constitution. Prof. Minot spoke of a considerable series of patients with pernicious anæmia, all of whom were treated with intramuscular preparations, the average amount given being equivalent to 50 to 100 g. of fresh liver per week. In no single instance did an objective neurological sign become more marked, and no abnormal sign appeared. There was objective arrest in every case, improvement in all, though in two cases this was somewhat slight. The sooner treatment was commenced after spinal cord lesions were evident, the better the result. More must be done for these patients than to give liver extract; they must have re-training exercises for the muscles, and proper attention must be given to the circulation. If for any reason these patients were kept in bed for a time, on getting up and about again they would notice their disorder more than would a normal person. It was better to give 1 c.cm. intramuscularly once a week than to give large amounts of liver extract by the mouth; by the former means the liver given was 15 to 20 times as potent. Patients who had cord lesions as well as blood defect must be watched, and asked to report periodically, for individualisation was the important keynote to satisfactory treatment. If a patient was on appropriate liver, he did not need iron, but if the colour-index was diminishing, iron must be given in addition. But there were cases which did not seem to be doing well in which what was needed was not iron, but more liver.

POTENCY, CONCENTRATION AND DOSAGE OF CURATIVE AGENTS

It was very important, said Prof. Minot, for the physician to know what was the material he was using, and what it might be expected to do. Some of the extracts on the market were not sufficiently potent, and it must be remembered that three times the concentration did not mean thrice the potency. Some cases which seemed rebellious to liver medication by the mouth responded well to the intramuscular preparation. More liver was needed for older than for younger patients, in the case of the former especially when arterio-sclerosis or cardiovascular disease was present. No doubt chronic fatigue could act in an inhibitory way, and hence part of the treatment should be directed to seeing that this fatigue was prevented by proper sociological treatment. If it was decided to use iron, the important thing was to use enough of it; the particular salt selected was unimportant. Seldom was this needed to be given intramuscularly; to use iron in this way it was necessary to approach closely to the toxic boundary, and the patient would have uncomfortable symptoms. Many patients had need of iron in addition to liver extract. He thought the effects of liver and iron for the same patient, in varying proportions, was a subject well worthy of further study. Some patients might do better with both than with either separately. In some cases it might be desirable to give both, so as to accelerate the rate of regeneration. He projected a slide giving particulars of the case of a woman who had idiopathic hypochromic anæmia, and who required that iron be given indefinitely. While she was taking iron her hæmoglobin was normal, but if she abstained from it for two or three months the hæmoglobin was found to fall. Such cases needed continual watching, so as to keep the hæmoglobin at a healthy level. He asked the meeting to appreciate that there were other substances in liver than the liver extract factor effective in pernicious anæmia. It had been found by Dr. Whipple that the liver extract factor effective in pernicious anæmia had practically no effect on experimental dogs made anæmic by hæmorrhage. There was, however, in liver a second factor which was effective in such anæmic dogs. This had been little studied in human beings and he hoped that more would be heard about it with the progress of time. He said he would like to take the opportunity of bringing to the notice of the meeting some new work of physiological interest which had been done by Dr. Patek and himself recently on the possible effects of bile and

other pigments in the manufacture of hæmoglobin. There had been some discussion in the past as to whether bile-pigments were absorbed or not. They had found that if bile-pigment was given daily to patients with idiopathic hypochromic anæmia there was no response. When it was given together with suboptimal amounts of iron there was a definite reticulocyte rise, which would not have occurred in response to the iron alone. Chlorophyll had also been studied in various ways, but only recently had pure chlorophyll preparations been available. Observations had been made on the treatment of 15 cases of idiopathic anæmia with chlorophyll. When the chlorophyll preparations were added to iron there was a definite reticulocyte rise and an increase in the rate of hæmoglobin manufacture. It seemed evident that, whether given intramuscularly or orally chlorophyll preparations did accelerate the use of iron. He and his colleagues had no idea how the chlorophyll worked in this connexion. He was anxious to safeguard himself against any suggestion that chlorophyll or bile-pigment must be given to all cases of idiopathic hypochromic anæmia, because first-rate iron preparations, in sufficient quantity, would accomplish what was required in 99 per cent. of cases. But the study, he felt, might result in a better understanding of the mechanisms by which iron could be utilised in the body.

In conclusion, Prof. Minot said that in spite of recent advances in our knowledge of the anæmias much still remained to be learned. The careful study of patients at the bedside was as necessary as ever.

GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV. 27TH–30TH, 1934

Penal Cases reported by the Dental Board

The Case of John Herdman Faulding, registered as of 22, Earlsbrook-road, Redhill, Surrey, "Dentist 1921," who had been convicted, having pleaded guilty, at the Reigate Borough Petty Sessions of feloniously and fraudulently embezzling two sums of £2 each received by him from his employer, and had been sentenced to two months' imprisonment. The Board had found that Mr. Faulding's name ought to be erased from the Dentists Register. Mr. Faulding attended, and the Council, after deliberation in camera, directed the Registrar to erase his name.

The Case of Thomas Ross Graham, registered as of 15, West-street, Faversham, "Dentist 1921," who had been charged with various canvassing offences. The Dental Board had heard oral evidence and received documents, and had found that the name of Mr. Graham should be removed from the Register. Mr. Graham attended and addressed the Council on his own behalf. After deliberation in camera the President announced that the Registrar had been directed to erase the name.

The Case of William Gray, registered as of 243, St. James'-road, Glasgow, C.4, "Dentist 1921," whose case had been reported by the Department of Health for Scotland. The charge related to a dental letter issued by the National Amalgamated Approved Society. The Dental Board had found that Mr. Gray had signed the letter and endeavoured to obtain money for the work although it had been carried out by another dentist who had been declared by the Department unsuitable for service in connexion with dental benefit. The Board recommended the erasure of Mr. Gray's name. Mr. Gray was not present nor was he represented, but Mr. C. J. S. Harper, the Council's solicitor, read a letter from him. His name was erased.

The Case of Walker Hill, registered as of 49, Hurst-road, Erith, Kent, "Dentist 1921," also charged with offences in relation to a dental letter. He had wrongfully obtained payment from the Prudential Approved Society for a set of dentures which he had not supplied; the case had been reported by the Minister of Health. Mr. Hill did not attend and was not represented. A letter from him was read by Mr. Harper, and his name was erased.

The Case of William McCulloch Lawson, registered as of 11, Promontory-terrace, Whitley Bay, Northumberland, "Dentist 1921." Mr. Lawson also was charged in connexion with a dental letter issued by the Royal Liver Friendly Society, on which the Dental Board had found that he had wrongfully obtained payment for a set of dentures which he had not supplied. Mr. Lawson was neither present nor represented. The Registrar was directed to erase his name.

The Case of Samuel Morrison, registered as of Charing Cross, Larkhall, Lanarkshire, "Dentist 1921." He had appeared before the Dental Board on charges reported by the Department of Health for Scotland relating to dental letters issued by the National Amalgamated Approved Society and the Independent Order of Rechabites Approved Society. He had claimed to have carried out certain work and examinations which had in fact been done by another, one who had been declared unsuitable for service under dental benefit, thus enabling this man to obtain payments. Mr. Morrison was not present, nor was he represented. Mr. Harper read a letter from him. His name was erased.

The Case of Joseph Reay, registered as of Main-street, Hensingham, Whitehaven, "Dentist 1921." This respondent also had been charged with claiming money for dentures not supplied, by means of a dental letter issued by the Navy, Army, and Air Force Insurance Fund. Mr. Reay was neither present nor represented, but a letter from him was read. His name was erased.

Penal Cases Adjourned from Previous Sessions

The Case of Frederick Richard Lanfear Miller, registered as of 53, Pembridge Villas, Notting Hill Gate, London, W.11, M.R.C.S. Eng. 1922, L.R.C.P. Lond. 1922, who had been summoned to appear before the Council on the charge of being convicted of being in unlawful possession of dangerous drugs and sentenced to 12 months' imprisonment. Mr. Miller appeared on Nov. 28th last year,[1] and the Council postponed judgment for a year. He now appeared again, accompanied by Mr. Thomas Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society. Mr. Carthew addressed the Council and put in testimonials from respondent's professional colleagues, showing that respondent had completely abandoned the use of drugs and was a capable and trustworthy practitioner. The Council did not direct the erasure of Mr. Miller's name.

The Case, adjourned from Nov. 29th, 1933, *of James Scott Webster*, registered as of 31, Bank-road,

[1] THE LANCET, 1933, ii., 1334.

Bootle, Liverpool, M.B., Ch.B. 1928, U. Edin., who had been summoned to appear before the Council for offences against the Dangerous Drugs Act.[2] Mr. Harper explained his vain efforts to trace Mr. Webster, and read a telegram from him stating that he was ill but giving no address. After deliberation in camera the Council decided to postpone the case until May.

The Case, adjourned from Dec. 1st, 1933,[3] *of Steven Tait Pottinger*, registered as of "Lyndhurst," Willenhall, Staffs, M.B., Ch.B. 1925, U. Edin., who had been summoned to appear before the Council on charges of canvassing.

At the previous hearing the Council had found the charges proved but had postponed judgment. Mr. Pottinger appeared in answer to his Notice, accompanied by Mr. T. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors to the London and Counties Medical Protection Society. Mr. Carthew addressed the Council, putting in testimonials from respondent's professional colleagues and others, including one of the doctors whose patients he was alleged to have canvassed. After deliberation in camera the President announced that the Council had decided not to erase Mr. Pottinger's name from the Register.

The Case of Donald McGregor Stewart,[4] registered as of 5, Waunwen, Nantymoel, Glam., L.R.C.P. Edin. 1917, L.R.C.S. Edin. 1917, L.R.F.P.S. Glasg. 1917, who had been summoned to appear before the Council on Nov. 24th, 1932, on charges associated with driving a motor cycle without due care and attention and under the influence of drink. The charges had been found proved and sentence postponed.

Mr. Stewart attended and was accompanied by Mr. T. Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors, acting for the London and Counties Medical Protection Society. Mr. Carthew read testimonials to Dr. Stewart's conduct and reputation, and the President announced, after deliberation in camera, that the Council had decided not to erase the name.

The Case of Victor Cecil Tughan, registered as of 4, Stanton-court, Greenhill, Weymouth, M.R.C.S. Eng. 1925, L.R.C.P. Lond. 1925, who had been summoned to appear before the Council at its November session, 1933, on charges of drunkenness in connexion with a motor vehicle. The charge had been found proved but judgment had been postponed.

Mr. Tughan was present but was not legally represented. He drew attention to the testimonials he had supplied, and these were read by Mr. Harper. Mr. Tughan said he was not now in practice and had completely changed his habits. After deliberation in camera the President said that the Council had decided to postpone the case until the May session, when they hoped to receive testimonials from professional colleagues.

New Penal Cases

CHARGES OF DRUNKENNESS

The Case of George Francis Maher, registered as of Ballymore House, Gooldcross, Tipperary, L.R.C.P. Edin. 1925, L.R.C.S. Edin. 1925, L.R.F.P.S. Glasg. 1925, who had been summoned to appear before the Council on the following charge:—

That you were convicted at the Sheriff Court, Edinburgh, of the following offences, viz.:—(1) On June 30th, 1933, of driving a motor-car while under the influence of drink to such an extent as to be incapable of having proper control of the said car, and were fined £20; and (2) On May 29th, 1934, of driving a motor-car while under the influence of drink to such an extent as to be incapable of having proper control of the said car, and were fined £20 and disqualified from holding or obtaining a licence for 12 months.

There was no complainant in this case. The Council's solicitor described the two occasions and read Mr. Maher's letter of explanation. On the first occasion, he said, he had just been celebrating the winning of a Derby sweepstake; the second was on the occasion of the International Rugby match, when he had had an attack of influenza and was feeling very weak and feverish. Mr. Maher briefly addressed the Council. After deliberation in camera the President announced that the convictions had been found proved, but judgment would be postponed until November, 1935.

The Case of John Joseph Macabe, registered as of 19, Mawson-street, Ardwick, Manchester, M.B., B.Ch. 1918, N.U. Irel., who had been summoned to appear before the Council on the following charge:—

That you were convicted: (1) On August 30th, 1934, at the Bolton County Police Court (in the name of James J. Macabe), having pleaded guilty, of drunkenness at Little Lever on August 20th, 1934, and were fined 7*s.* 6*d.*; (2) On August 31st, 1934, at the Manchester City Police Courts (in the name of John McCabe) of being drunk and of riotous behaviour on August 30th, 1934, and were fined 10*s.*; (3) On Oct. 3rd, 1934, at the Manchester City Police Courts (in the name of John McCabe) of being drunk and of disorderly behaviour on Oct. 2nd, 1934, and were fined 20*s.*; (4) On Oct. 4th, 1934, at the Dewsbury Borough Police Court (in the name of John McCabe), having pleaded guilty, of being drunk and disorderly on Oct. 1st, 1934, and failing to appear to summons, and were fined 27*s.* and £1 11*s.* costs or 28 days' imprisonment in default."

There was no complainant in this case. Mr. Macabe attended. Mr. Harper gave an account of the circumstances in each case, and recalled previous convictions registered against Mr. Macabe for drunkenness and assault. He had been put on probation by the Council in 1927–28, and his name had been erased in May, 1929, and restored in November, 1932. Mr. Macabe addressed the Council, asking for another chance. After deliberation the President announced that the Council had found the charges proved and had directed the erasure of Mr. Macabe's name.

CHARGE OF ABUSE OF POSITION

The Case of William Lock, registered as of 9, Argyle-close, Ealing, London, W.13, L.R.C.P. Edin. 1900, L.R.C.S. Edin. 1900, L.F.P.S. Glasg. 1900, who had been summoned to appear before the Council on the following charge:—

1. That being a registered medical practitioner you committed adultery with one Mrs. Agnes Brewer, a patient of yours, on frequent occasions since 1929. 2. That by reason of the said facts you have abused your position as a registered medical practitioner. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect.

At the hearing in May Mr. Lock was unable to be present owing to ill-health. Mr. Edgar H. Hiscocks, solicitor, who represented the complainant, applied for an adjournment of the case on this ground until the November session, and the application was acceded to.

The complainant was Mrs. Aida Winifred Rebecca Lock.

This case was heard in camera, and at its conclusion the President announced that the Council had not found the facts proved to their satisfaction.

The Case of Ian Duguid, registered as of Avenue House, Rochester, Kent, M.B., Ch.B. 1924, U. Edin.,

[2] THE LANCET, 1933, ii., 1335.
[3] THE LANCET, 1933, ii., 1387.
[4] THE LANCET, 1932, ii., 1234.

who had been summoned to appear before the Council on the following charge :—

That being a registered medical practitioner you abused your position by committing adultery during the month of June, 1934, and thereafter, with Mary Skinner, a married woman, whom and whose husband and children you had attended professionally. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainant was Mr. Stanley Charles Skinner. The respondent was not present. Mr. Harper gave evidence of serving a Notice of Inquiry. The complainant was represented by Mr. Van Oss, counsel, instructed by Messrs. Wood, McLellan and Williams, solicitors.

Mr. Van Oss explained the facts of the case. At the end of 1932 the respondent, with his sister and brother, had taken over the practice of a doctor who had previously attended Mrs. Skinner and the two children. In that way and that way only had respondent been able to meet her. It had then come to complainant's notice that the doctor and complainant's wife were arranging to go away together. On June 8th, 1934, the wife had left home and had not returned. She had lived with Dr. Duguid as his wife for two months.

Mr. Skinner testified to his statutory declaration, confirming these facts, and including a letter from his wife admitting them, and begging him not to get the doctor struck off the Register. He produced cheque and accounts in evidence of the professional relationship.

Mr. Van Oss read a statutory declaration from the elder son of Mr. Skinner, who was in a nursing-home, recording a confession by respondent that he and Mrs. Skinner intended to run away together.

Mrs. F. Hunt testified to her statutory declaration describing how she had let a furnished flat to persons whom she identified as Mrs. Skinner and Dr. Duguid, and who had lived as man and wife.

Mr. F. G. White gave evidence that he had been a patient of Dr. Ian Duguid's and knew him well; that he had accompanied Mrs. Hunt when she had identified the gentleman who had rented her flat and had recognised him as Dr. Duguid.

After deliberation in camera the President announced that Dr. Duguid had been found guilty of infamous conduct in a professional respect, and that the Registrar had been directed to erase his name.

Alleged Improper Profit

The Case of Leo Frederick Clarke, registered as of Gordon House, Highgate-road, N.W.5, L., L.M. 1925, R.C.P. Irel.; L., L.M. 1925, R.C.S. Irel. 1925, who had been summoned to appear before the Council on the following charge :—

That being a registered medical practitioner: (1) You attempted in or about December, 1933, to obtain from Mr. Richard Henry Ormsby, who was a patient of yours, payment of a sum of £2 2*s*. for a pair of spectacles with which you supplied him, having purchased the same at a price of 7*s*. 10*d*. from a company in which you represented to the said Mr. Ormsby that you had an interest; and (2) You attempted at the same time to obtain from Mr. Ormsby payment of a sum of 10*s*. 6*d*. for repairs to another pair of spectacles executed on your behalf by the said company at a cost to you of 2*s*. 10*d*. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainant was Mr. Richard Henry Ormsby. Dr. Clarke attended, accompanied by Mr. O. Hempson, solicitor, and the complainant was represented by Mr. J. R. Hodder, solicitor, of Messrs. Hodder and Son.

Mr. Hodder said that respondent had one day noticed that Mr. Ormsby's spectacles were broken and had offered to get them mended. Mr. Ormsby had demurred, but the doctor had pressed his suggestion, saying that he knew an optical company and would see that complainant was not "stung." Mr. Ormsby had asked for an account, but had never had one from the optical company; he had later received one from the doctor, which he had not paid. He had had several letters from a debt-collecting society, and had finally been taken to the county court, where a judgment for £20 had been given instead of the £36 19*s*. claimed. During those proceedings the sums actually spent by respondent on the spectacles, as set out in the charge, had been admitted and the claim for two guineas withdrawn by Dr. Clarke's counsel.

Mr. Ormsby testified to his statutory declaration and related the facts of the case.

Cross-examined by Mr. Hempson, he agreed that he had taken the strongest exception to respondent's charges. The glasses, he admitted, had not been mentioned in his letter to the protection association (which Mr. Hempson read). Nor were the glasses mentioned in the affidavit of defence. The letter declared that he would pay no more than 7*s*. 6*d*. a visit for a total of 22 visits; the affidavit raised a charge of negligence, which had eventually been withdrawn in court by complainant's counsel. Judgment had been given for 40 visits at the rate of half a guinea a visit, and the cost price of the glasses, thus cutting down the charge per visit by 4*s*. 6*d*. Witness denied that he had done everything in his power to avoid paying the account. Respondent had not defined his "interest" in an optical company but had certainly used the expression. There was no prescription for the glasses. If Dr. Clarke had read the glasses before and after the repair there might have been professional service, but if so it was certainly not at his request. There had been no concealment of the charge for the glasses. Complainant had wished to keep the transaction for the glasses quite separate from that for professional services. Re-examined, he said that counsel for Dr. Clarke had withdrawn the charge for the glasses after a member of the optical company had given evidence; until then Dr. Clarke had persisted in the charges. In reply to Mr. Eason he said the doctor had never tested his eyes. In reply to the Legal Assessor he said he had had no dealings with the optical company, but the glasses had been handed to him by Dr. Clarke.

Mrs. Ormsby corroborated her husband's evidence.

Mr. Hempson then called the respondent, who said that he had attended Ormsby and rendered services, sending in an account for £36 19*s*. He admitted that the charges made to him by the optical company were as stated, and that he had charged Ormsby the larger sums alleged. He considered himself entitled to the difference in return for the trouble he had taken in measuring the lenses, writing a prescription, sending the glasses to the company, testing the lenses on return, and taking them to Ormsby's house by arrangement. He had no interest whatever in the company. Ormsby had not asked for the company's account, but had told him to include the charge in his bill. Cross-examined by Mr. Hodder, respondent admitted that in the county court he had not given a detailed description of the transaction. He had not stated in court that he had performed any services in respect of the glasses. In reply to a question by the Legal Assessor, he said that he had not been in the witness-box when his counsel had

withdrawn these charges, and had therefore had no opportunity of making any such statement. He had handed the prescription back to the company and had not kept a copy. The transaction was quite an exceptional one. He could not have sent Ormsby to the company direct, as it was a wholesale business.

Mr. Hodder accepted respondent's assurance that he had no interest in the company.

Mr. Hempson in his address reminded the Council that it was a common practice for doctors to charge patients more for drugs, apparatus, trusses, and so forth, than the chemist or supplier charged them. Respondent could not have justified passing on a wholesale charge to a patient. If he had sent Ormsby to a retailer optician the charge would have been much higher.

Mr. Hodder stressed the fact that respondent had never before the present hearing claimed to have performed any service in regard to the glasses.

The President, announcing the decision of the Council, said that a number of the charges alleged against Dr. Clarke had been proved to the Council's satisfaction—namely, he had attempted to obtain from Ormsby £2 2*s*. for a pair of spectacles which he had purchased for 7*s*. 10*d*., and 10*s*. 6*d*. for repairs which had cost him 2*s*. 10*d*. Nevertheless, it having been agreed between the complainant and the respondent that respondent was not interested in the optical company which he had recommended to the complainant, and the complainant having obtained an abatement of the respondent's charges in the appropriate civil court, the Council had decided to take no further action in the case.

A Charge of False Certification

Mr. Charles Joseph Pemberton Paglar, L.M.S. Singapore Med. Coll., 1917, appeared before the Council on a charge of having given a patient a Wassermann certificate which did not relate to his case. The charges had been proved to the satisfaction of the Medical Council of the Straits Settlements and the Federated Malay States which had directed its Registrar to erase his name. Against this decision Dr. Paglar appealed to the Supreme Court of the Straits Settlements, his appeal being dismissed with costs on August 16th, 1933. Dr. Paglar appeared before the Council and gave an account of his actions; after deliberation in camera the President announced that the facts had not been proved to the satisfaction of the Council.

Removal of Name from Register

After considering a report from its executive committee the Council directed the Registrar to remove the name of Ernest Melville Carefoot from the Register on a report from the College of Physicians and Surgeons of Saskatchewan that his name had been erased from its Register in consequence of his having been found guilty of unbecoming, improper, and unprofessional conduct. It had further been ascertained in correspondence that the qualification had not been withdrawn on the ground of the adoption of any theory of medicine or surgery.

REVIEWS AND NOTICES OF BOOKS

Atlas Fundus Oculi

By WILLIAM HOLLAND WILMER, M.D., LL.D., Professor of Ophthalmology of the Johns Hopkins University School of Medicine. With an introduction by WARFIELD T. LONGCOPE, M.D., Professor of Medicine, Johns Hopkins School of Medicine. London: Henry Kimpton. 1934. One hundred coloured plates, each with text. £7 7*s*.

IT is a pleasure to look through these plates of the normal and abnormal fundus oculi. The original paintings from which they have been reproduced were made from private cases or for the various departments of the Johns Hopkins Hospital, and each plate has a short summary of the case and notes of the special points brought out in the picture. Such an atlas is a luxury. Its utility must be limited by its costliness, for we can hardly suppose that many students will have access to it except in libraries. Nor can we wholly endorse the opinion of the author that cheaper reproductions of similar conditions are unsatisfactory unless we define what is meant by unsatisfactory. Certainly there are sound and beautiful books available which cover much the same ground as that occupied by Dr. Wilmer's sumptuous treatise. Photographs of the fundus such as those made by Messrs. Curry and Paxton lack the element of colour, but the fifty pictures of the fundus published three years ago by the late Ernest Clarke from coloured drawings in the collection of Messrs. Hamblin serve much the same purpose, and the last English edition of Haab's Atlas illustrates about as many fundus conditions as this book. But because there is much and such good material for our instruction available, there is no reason for not being grateful to an author and his publisher who strive to do better still, and we shall be surprised if at some future date Dr. Wilmer's book is not succeeded by something with an even larger range. For the impetus to completion will not easily be satisfied. It does not appear possible for all or even nearly all the conditions seen by the ophthalmoscope to be included in any pictorial treatise, and illustrations of typical cases and of a few rarities form the bulk of this work despite its size and wealth of illustration. It is especially of interest in that it shows several types of negroid fundus and a few pictures of the normal fundus in animals. The detailed description of each plate placed opposite to it is a valuable feature of the work. We appreciate the immense industry and care which must have gone to produce a volume which will be an ornament to any library.

A Text-book of Midwifery

Seventh edition. By R. W. JOHNSTONE, C.B.E., M.D., F.R.C.S.E., M.R.C.P.E., F.C.O.G., F.R.S.E., Professor of Midwifery and Diseases of Women, University of Edinburgh; Physician, Royal Maternity Hospital; Gynæcologist, Royal Infirmary, Edinburgh. London: A. and C. Black, Ltd. 1934. Pp. 463. 18*s*.

ALTHOUGH only two years have elapsed since this text-book of midwifery was revised for its sixth edition, Prof. Johnstone has found it necessary to make several changes. The original arrangement of the subject is maintained. The physiology of pregnancy, labour, and the puerperium is considered in full before any reference is made to the pathological aspect. Modern views of the physiology of menstruation are described in detail and the account of fœtal circulation is admirable. The chapter on the management of normal labour has been extended. It is, as it should be, entirely practical, and the paragraphs which deal with the use and abuse of narcotic and analgesic drugs will be of great help to all who read

them. The management of the infant born in a state of oligopnœa is excellently described. The section on treatment of hæmorrhage during pregnancy, together with the underlying principles which should guide it, leaves the reader in no doubt as to the correct procedure to adopt. This is in refreshing contrast to the practice in many other text-books of obstetrics which give the student half a dozen or more different methods of treatment and inadequate information on the advantages and disadvantages of each. The wisdom of immediate resort to the obstetric forceps when delivery of the after-coming fœtal head presents difficulties is emphasised.

The book is easy to read and the illustrations exceptionally clear and purposeful. The Aschheim-Zondek reaction is depicted in colour. In every way this is an admirable production.

Anæsthesia and Analgesia in Labour

By K. G. LLOYD-WILLIAMS, M.D., B.S. Lond., Hon. Anæsthetist to the Royal Free Hospital. London: Edward Arnold and Co. 1934. Pp. 96. 5s.

THIS capital little book is divided into chapters which deal with the three stages of labour, with abnormal deliveries, and with anæsthesia and analgesia in complicated labour. For the early part of the first stage the author approves of bromide and chloral. All the commonly employed drugs and methods, including various barbiturates, are concisely discussed. This applies also to the management of the later stages. The book in fact provides an excellent summary of current measures for providing relief of pain in labour without showing a strong individual preference for any one of them. There is also a good account of the proceedings necessary for resuscitation of the newly born.

Dr. Lloyd-Williams, rightly in our opinion, lays stress on the fact that it is in the early stages of labour that more relief is needed than is usually provided. This applies especially to primiparæ. As Dame Louise McIlroy points out in a foreword, the problem of defining the measures for relief of pain which may be employed by midwives in their practice has not yet found a satisfactory solution. Our only criticism of the book is that the author has not given more attention in it to this particular subject, at the moment one of the urgent practical problems in obstetrics, taking into account the great proportion of confinements which are conducted by midwives.

This work is entirely devoid of padding and should be most useful to house officers in maternity hospitals and to practitioners, while students would get valuable information from it.

International Narcotics Control

By L. E. S. EISENLOHR. London: George Allen and Unwin, Ltd. 1934. Pp. 295. 10s. 6d.

WRITING from Geneva, and after close association with the agencies of the League of Nations dealing with the matter, Mr. Eisenlohr discusses the problem of international administration of the drug traffic. He relates the history and objects of the international organisation which has been developed, records the labours of the Opium Advisory Committee, of the Permanent Central Opium Board, and of the more recently established Supervisory Body for limitation of the manufacture of narcotic drugs. The author freely criticises the work of the several international conferences, and of the advisory committee of the League of Nations. He emphasises the fundamental necessity for restricting the production of the raw materials—the opium poppy and the coca shrub, which now at long last is claiming the attention of the League of Nations. Mr. Eisenlohr asserts that "it is almost incredible that in thirteen years of its existence the advisory committee has failed to put forward one comprehensive policy for ending the narcotic traffic." This he attributes to the composition of the committee and the too narrow view taken of the duties confided to it. Its operations aimed rather at the "symptoms of the trouble than at its source." The author considers the creation of the Permanent Central Opium Board, now four years old, the principal achievement of the Second Geneva Conference of 1924. It was however a "compromise" between those who sought for a strong international supervision and those who reluctantly surrendered national control. The state in which it was finally allowed to materialise is described by Mr. Eisenlohr as being "clipped and tied." He attributes the more recent Limitation Convention to the pressure of public opinion backed up by the insistence of some of the more progressive members of the League's Assembly. The two final chapters deal with the production of raw opium in India and in the Near East. The unedifying story of the earlier history of the Indian opium trade is lightly sketched, and the working of the Governmental monopoly is described. It is stated that since 1913, in spite of restricted output, reduced exports, and an even rate of consumption at home, revenue has been very greatly increased. In the case of Turkey and Persia, both hitherto among the largest producers of raw opium, Mr. Eisenlohr is hopeful that the new Government monopolies in course of establishment may result in a reduction of output of the raw material; and, indeed, the possibility of an international monopoly of narcotics is adumbrated as a desirable solution.

The work is carefully compiled, its arguments are fortified by numerous references, and if somewhat hypercritical of the labours of others it is obviously inspired with a desire to abate a social evil which has grown to alarming proportions.

Synopsis of Genito-Urinary Diseases

By AUSTIN I. DODSON, M.D., F.A.C.S. London: Henry Kimpton. 1934. Pp. 275. 12s. 6d.

THE amount of knowledge that the general practitioner must possess, if he is to be able to act as a good adviser to his patient, is so great that it is almost beyond his capacity to contain it. Whereas the consultant is in the happy position of being able to discard that which does not concern him, the general practitioner must have a working knowledge of every important advance that is made in the innumerable branches into which medicine is dividing itself. Hence the necessity for synopses of medical specialties in which the essential facts are presented to the overworked practitioner. Dr. Dodson, who occupies a chair in the Medical College of Virginia, describes the recognised principles of the practice of urology. He summarises the signs and symptoms of genito-urinary diseases, the technique of examination, and the main points in diagnosis and treatment. All unnecessary details, theories, and refinements are omitted. The author has interleaved his work with excellent diagrams and illustrations that not only increase the understanding of the text but themselves furnish an excellent epitome of genito-urinary knowledge.

After reading this work, which in all contains only 275 pages, the reader who started with very little experience of urological problems will possess a good working knowledge of the subject.

Chronic Rheumatism: Causation and Treatment

By R. FORTESCUE FOX, M.D., F.R.C.P. Lond., F.R.Met.S., President of the International League against Rheumatism, Member of the Committee on Rheumatism of the Royal College of Physicians; and J. VAN BREEMEN, Doctor of Medicine, Medical Director of the Central Institute for Physical Treatment in Amsterdam. London: J. and A. Churchill Ltd. 1934. Pp. 364. 12*s*. 6*d*.

PHYSICAL treatment in the rheumatic group of diseases has for long had the reputation of being a rather haphazard, hit or miss measure. This book should help to establish its value when it is used with skill and judgment. The rheumatic problem is here approached from an angle which those acquainted with text-books on this subject will find unfamiliar and stimulating. In the opening sections are set out in detail the reasons underlying the use of physical methods of treatment, special attention being paid to skin reactions and in particular to circulatory abnormalities. The ill-defined condition known as "chill" is discussed as a definite entity of very real importance; the authors believe what they call "chronic chill" to be a frequent precursor of disease. The suggestion is not that this condition can actually be a cause of rheumatism but that a person whose body temperature is lowered in whole or in part is what the French call a "candidate" for illness, or, to use another metaphor, is like a loaded gun which a trivial touch may explode. The terms pleo-thermal and peno-thermal are used to differentiate individuals according to their power of heat regulation, and the chilly peno-thermal person is held to exhibit a partial reversion towards the cold-blooded state. The authors do not seem to have proved the connexion between "feeling the cold" and a subnormal temperature on which this argument is based, but few will dispute that exposure to cold is associated with at least the symptoms classed as rheumatic, and the comfort afforded by hyperæmic treatment is generally acknowledged.

A number of chapters are devoted to diagnosis and examination of rheumatic patients, accurate diagnosis being essential if the appropriate physical treatment is to be applied. Since physical stimuli excite very different reactions in different subjects each patient must be studied as an individual problem; it is made clear that this form of treatment cannot be applied as one might offer a stock prescription. Then follows a description of the aims and methods in treatment, a valuable section which might well have been expanded; it serves as it is to show to the reader that the correct application of physical therapy needs special knowledge which can only be acquired by practice and experience. One observation is well worth noting—that ultimately all rheumatic processes come to a standstill, and that often this is noticeable first in the joint first attacked. The importance of this from the therapeutic standpoint is twofold. First, the pessimism of the doctor may have driven the patient to seek advice elsewhere at the very moment when the condition ceases to progress, and the credit of this arrest, which is in fact spontaneous, may be given to others. Secondly, it means that the position of the affected joints at every stage of the disease should be watched. A number of patients unable to walk owe their disability not to the rheumatic process but to malposition. Thus even in the last stages of the disease treatment may be helpful.

The social and industrial aspects of rheumatism are discussed and a summary is given of reports presented at the Congress of Rheumatism held in Paris in 1932; the reports are from various countries, Sweden, Holland, Germany, Russia. These show a consensus of opinion that what is required is a new special service for rheumatism consisting of expert diagnosis and advice, specialised treatment both at an early stage and in advanced conditions where re-education and amelioration is necessary. Finally a scheme is outlined for the adequate treatment of rheumatism and for the teaching of those who will undertake the treatment.

Sex Difficulties in the Male

Second edition. By KENNETH M. WALKER, F.R.C.S. London: Jonathan Cape. 1934. Pp. 254. 5*s*.

THIS is a new and completely revised edition of Mr. Kenneth Walker's book entitled "Male Disorders of Sex," published in 1930, of which we said: "We have nothing but praise for this book. It is a practical work which should be in the hands of every practitioner." This commendation is no less appropriate when applied to this edition. Primarily a specialist in genito-urinary diseases, the author lays no claim to being an expert psychologist; but he handles the psychological aspects of such problems as impotence, masturbation, and sexual deviations with a delicacy and objectivity not always found in the writings of his psychological colleagues. This volume has genuine merit. It is carefully written in a readable literary style; it introduces into the text a sufficient number of case-histories, drawn from extensive personal experience, to prevent the exposition from appearing too academic; it is produced in an agreeable format, and is of such a length that it can be read from cover to cover in a long evening.

Insect Physiology

By V. B. WIGGLESWORTH, M.A., M.D., Lecturer and Milner Research Fellow in Medical Entomology, London School of Hygiene and Tropical Medicine. London: Methuen and Co., Ltd. 1934. Pp. 134. 3*s*. 6*d*.

THE study of insect physiology, until ten years ago practically neglected, has been largely stimulated by the growing need for more accurate knowledge of the workings of a group of animals whose importance in relation to agriculture and medicine is becoming more and more evident. Dr. Wigglesworth, who has himself done much original work on the subject, has compiled an admirable review of the present state of knowledge. Those who know something of the physiology of the higher animals will be fascinated by the evidence here supplied of the extraordinary adaptability of living organisms. The small size and terrestrial habits of insects result in an urgent need for the conservation of water. This need has affected the nature of the body surface, the respiratory, digestive, and excretory systems, and the method of growth. Especially interesting facts have also been brought to light concerning the nervous and hormone mechanisms by which many activities are regulated. An insect satisfies the fundamental needs of a living organism by methods which are often strikingly different from those employed by the higher animals.

The general biologist will enjoy reading this book and, by reason of the excellent bibliography, it will be of considerable assistance to the specialist.

THE LANCET

LONDON: SATURDAY, DECEMBER 8, 1934

A PREVENTIVE SERVICE

THE school medical service has been in existence for 26 years. Many of the parents of present-day school-children have personal experience from their own childhood of the benefits to be derived from it. It is an established piece of the framework of our social organism. Those who are responsible for its administration, rather than its beneficiaries, are asking themselves whether it is properly fulfilling its function and whether full value is being obtained in return for an expenditure approaching £5,000,000 each year. In his annual review of the service for 1933,[1] Sir GEORGE NEWMAN gives his reasons for the belief that it has justified itself. The service was designed, as circulars from the Board of Education said in 1907–08, to improve the health conditions, both personal and in regard to environment, of the children of the nation and to secure the physical improvement, and, as a natural corollary, the mental and moral improvement, of coming generations. Among its immediate results were abolition of chlorosis, reduction of ringworm to negligible incidence, prevention of blindness, eradication of pediculosis corporis, reduction of the ascertained rate of malnutrition from 10 or 20 per cent. to 1 per cent., diminution of heart disease, rickets, and tuberculosis, and a general improvement in the physique of school-children. It rapidly determined the real state of health and physical fitness of the school-children, knowledge for the lack of which social reformers had been unable to formulate schemes for their welfare, and from this knowledge followed adaptations of education to the needs of the individual child. More remotely it has confirmed the existence of widespread damage to the health of children reaching school age and formed the touchstone for plans of amelioration both for them and for adolescents who have left school and lost its benefits without entitlement to those of national health insurance. It has created standards of nutrition, fostered school feeding, open-air education, nursery schools, education of the mentally defective and abnormal, provision for the rheumatic and the crippled and, above all, has pointed from the beginning and throughout its existence to the importance of the early and obscure manifestations of disease. No one who was in close touch with child-life before the year 1908 will controvert the claim that physique has vastly improved or that the school medical service has been the spearhead of attack on the physical unfitness which formerly prevailed. No doubt the advance of medical knowledge and social enlightenment would have brought about some improvement in any case during the last 25 years, but it would have been less complete without the concentration that an organised service makes possible.

What of the future? Is the school medical service static, as some of its officers complain? Has it shot its bolt? Is it engrossed with the correction of minor defects and lacking in vision? Sir GEORGE, while he does not admit any of the criticisms implied in such questions, points the way along which the service should travel. There is still need, he says, for vision and imagination, and above all "there is need for much fuller concentration on the legitimate claims of the normal child, who constitutes 70 or 80 per cent. of the school population. We have devoted much labour, time, and public money to the treatment of the defective child. Are we doing all that is practicable for the nutrition, physical education, nurture and health of the normal child? I fear we are not." In other words, we must not accept the "normality" of these 70 to 80 per cent. as being finally established, but prove that our standards of physical fitness based on averages of past observations are not too low. Turning to those passages which collate the findings of school medical officers as to under-nutrition, a question of lively interest at the present time, we are faced at once with this question of standards. Sir GEORGE fairly claims that the observations of 1340 school medical officers, assisted by 3338 nurses and a much larger body of school teachers, examining more than 3,000,000 children each year, are likely to afford a true picture of the state of nutrition of the school population. "The determination of under-nutrition," he says, "and still more its degrees, is in any case one of exceptional difficulty. In the present state of physiological knowledge there is no single test or standard of nutrition or of under-nutrition. . . . In practice the results are sound and relatively uniform." It is difficult to say whether the numerous pronouncements by school medical officers quoted in the report bear out this latter statement, because some of them seem to refer to cases of under-nutrition requiring treatment only, others to those requiring either treatment or "observation," while some appear to be concerned with all forms of disease or defect. Moreover, the really distressed areas do not figure very largely in the quotations in this report, although some of these are dealt with elsewhere,[2] and the accounts of them convey, on the whole, the same cheerful conclusion that malnutrition is not rife. The state of affairs is probably more clearly illuminated by a small investigation made by Dr. J. C. SPENCE in Newcastle.[3] It is true that this observer found a large proportion of the defective nutrition (using the term in a wide sense) among poor children to be due to antecedent disease, and this is a point which Sir GEORGE NEWMAN and the school medical officers constantly reiterate. But we cannot dismiss lightly the suspicion that susceptibility to infective and other diseases may very well be a measure of under-nutrition. In many cases we know that it is. While sympathy for those living on the necessarily meagre provision

[1] The Health of the School Child. Annual Report of the Chief Medical Officer of the Board of Education for the Year 1933. H.M. Stationery Office. 1934. 3s.

[2] On the State of the Public Health, 1933, pp. 209–15.

[3] THE LANCET, 1934, i., 1029.

of unemployment benefit or public assistance must not be allowed to divert our minds from the truth, it is equally important to avoid complacency founded on observations which can be little more than clinical impressions. It is satisfactory however to find that malnourishment was detected in only 11·1 per 1000 children submitted to routine examination, as against 10·7 in 1932 and 11·2 in 1931, and that local authorities are alive to their responsibilities, as revealed by an increase in the number of children fed from 399,400 in 1932–33 to 414,800 in 1933–34. Sir GEORGE again emphasises the value of milk rations and defends the Board's policy of medical selection for free milk and meals, in spite of the difficulty in detecting early manifestations of under-nutrition which he has himself admitted in the passage quoted above.

The provision of milk and meals is real preventive work. The same applies to physical education and the teaching of hygiene, which are the subject of an interesting chapter. While we have encouraged and developed games among the youth of the country, we have not kept pace with other countries in the systematic pursuit of physical fitness. The Board of Education has recently issued a revised syllabus of physical training, embodying the most modern ideas for coördinate development of the body and the senses. It has been received with much enthusiasm among school teachers, but in many areas its full use is hindered by a lack of trained organisers. This is an aspect of physical betterment which should be more vigorously brought to the notice of education authorities by the Board. Similarly the teaching of hygiene is dealt with in an excellent Handbook of Suggestions on Health Education issued by the Board. There is no field for the propagation of enlightened ideas on public and personal health to compare with the school, but it is essential that the teaching should be sound and that as little as possible should have to be unlearned in later life. The handbook if followed and accompanied by hygienic conduct of the school administration is a safe guide. Perhaps there is no greater reproach to the school medical service than its failure to prevent dental caries. Remedial work on a large scale is done, and unfortunately this is what the public wants. Over a million fillings were done in 1933, but more than 2,600,000 teeth were extracted, of which 452,406 were permanent. The real difficulty is one of prevention. Sir GEORGE discusses with appreciation the work of Mrs. MAY MELLANBY, D.Sc., but finds it impossible to dismiss the relevance of oral hygiene and the use of detergent foods.

The school medical service ought to be, to a certain extent, self-destructive. Like other branches of preventive medicine, it should blaze the trail and hand over the simple operations of hygiene to non-professional workers, just as water-supplies, sewage disposal, and the mechanics of ventilation have passed out of medical hands. But it should be in touch with new discovery and finding new fields of endeavour for itself. If it keeps this ideal before it, there is no danger of its becoming static.

THE ANÆMIAS REVIEWED

JUST when the anæmias are being differentiated and pigeon-holed, in the hope of fitting each with an appropriate specific therapy, those who are chiefly responsible for the ætiological classification on which therapy is based bring disturbing news. True, disturbance always precedes progress, but here it also destroys the growing conception of a group of blood diseases each caused by a definite deficiency and amenable to treatment only by supply of the defective factor in appropriate form and quantity. It is to the group of anæmias due to a shortage of efficient hæmopoietic factors that special attention has been directed in London this week. Prof. MINOT addressed a special meeting of the Royal Society of Medicine on some aspects of anæmia (see p. 1281), while the section of comparative medicine held a discussion on nutritional anæmias occurring in both man and domestic animals, opened by Dr. J. B. ORR and Dr. JANET VAUGHAN. Though the subject was attacked from different aspects a common leit-motif emerged —that the missing hæmopoietic principle is not necessarily the one which seemed clearly incriminated following the remarkable results of early therapeutic trials, and that it is probably rare in practice to find a simple deficiency of any one factor. "Bush sickness" or enzoötic marasmus, for example, a disease characterised by severe anæmia and progressive emaciation, has long been known to be relieved by iron in massive doses. Dr. ORR pointed out, however, that FILMER and UNDERWOOD have recently proved[1] that the anæmia is not due to an iron deficiency. It is readily cured by an iron-free filtrate of limonite, and at autopsy the organs of affected animals are found to be more heavily laden with iron than the organs of normal animals. The fact that the livers of the diseased animals have not lower iron concentrations than the livers of healthy animals indicates that there has been no difficulty in absorbing sufficient iron from the food; while the large accumulations would suggest further that the difficulty has been one of utilising the iron stored in the liver. FILMER and UNDERWOOD suggest therefore that the anæmia is due to absence from the food of some factor necessary for the utilisation of iron in hæmoglobin production, a substance which is present as an impurity in iron salts, and contained in limonite, though at present unidentified. Prof. MINOT described a series of experiments he had recently carried out in association with Dr. A. J. PATEK which also suggest that iron-deficiency anæmias are not necessarily as simple as they appear. These experiments show that both bile-pigments and purified chlorophyll, though inactive when given alone, will enhance the potency of suboptimal doses of iron in idiopathic hypochromic anæmia. Certain pigments would appear to be essential to the utilisation of iron by the body. The mechanism involved is at present unknown. It is possible

[1] Filmer, J. F.: Australian Veterinary Jour., 1933, ix., 163. Filmer, J. F., and Underwood, E. J.: Ibid., 1934, x., 83.

for instance that the value of spinach as a hæmopoietic substance is not so much due to its iron as its pigment content.

In Addisonian pernicious anæmia also there is much evidence that at least a dual deficiency may be present. During maintenance treatment more satisfactory hæmatological and clinical results are obtained, in many cases, when iron is given as well as liver extract. The red cell count can, in such patients, be kept well above 5,000,000 per c.mm. when both drugs are given, while it is sometimes difficult to raise it above 4,500,000 per c.mm. on liver alone. The difference may appear insignificant but there is ample evidence that nervous system lesions are far less likely to result when the higher count is present. The clinical improvement in these patients is, as Dr. VAUGHAN insisted, far more striking than the rise in red cells. Again, in sick men and sick animals, as opposed to experimental animals, it is not unusual to find other deficiency symptoms associated with anæmia, such as wasting, skin lesions, koilonychia, glossitis. In eagerness to treat the anæmia other conditions must not be forgotten; as Prof. MINOT said in concluding his address, "it has to be recognised that science is unstable, art uncertain, but that the sick individual will always remain the centre of the picture." Though one deficiency may dominate the clinical picture it is essential to remember that one drug alone will not necessarily produce a cure; also that any drug used in a deficiency disease will only exert an optimum action when given together with an adequate and well-balanced diet. The prevention of the common deficiency diseases, among them anæmia, is as much an economic as a medical problem to-day, since the basis of all treatment must be an adequate food-supply.

NON-UNION IN FRACTURES

THE healing of a broken bone is a local process: to a surprising extent it is independent of general metabolism and uninfluenced by general disease. This is true even when the fracture is the direct outcome of a general metabolic disturbance. No more striking instance could be cited than the case described by Dr. C. RAY MURRAY, of Philadelphia, in an address this year to the American Medical Association.[1] After gastro-enterostomy the patient developed a gastro-colic fistula which prevented absorption of calcium. In these circumstances the calcium and phosphorus content of the blood was maintained at a normal level by progressive osteoporosis, and this led to the patient's readmission to hospital suffering from multiple spontaneous fractures. Yet in spite of the advanced osteoporosis all the fractures healed with abundant callus. Fractures in the disease known as fragilitas ossium show the same tendency to unite. Old age, arterio-sclerosis, and the like have been blamed for the non-union of fractures of the neck of the femur, but it has to be remembered that simultaneous fractures elsewhere in the same patient often unite without difficulty. MURRAY states as a basic principle that "variations in the character and amount of the healing process are dependent on factors limited to the region affected." He also considers it certain that delayed union or non-union is due to failure in the deposition of calcium in the connective tissues. The essential processes in the healing of a fracture are development of an actively growing granulation tissue between and around the bone ends, and calcium deposition in this tissue. If these two parts of the reparative process take place normally, ultimate union is assured—though of course there may be malunion or angulation due to inefficient protection of the limb, or incomplete reduction.

Certain facts about the early processes in the healing of bone have been clearly established. For example, the initial traumatic hæmatoma plays a useful part; therefore sponging out the blood clot definitely delays union. Stripping up the periosteum leads to a more abundant formation of callus. Granulation tissue will not grow across a fluid medium, nor will it grow at right angles to muscle-fibres; hence transverse interposition of muscle and encysting of the hæmatoma are insuperable barriers to the formation of callus. Local necrosis in its extreme degrees—as may be caused by crushing—destroys the tissues which take part in healing and interferes with their blood-supply. Where the bone-ends have become dense and eburnated the process of calcification may be delayed or even absent. The calcium used in repair of bone is obtained by decalcification of the bone in the neighbourhood, and dense anæmic bone will not part with its calcium; moreover, frequent irrigation of a compound wound will remove the excess calcium and prevent its fixation. It is obvious also that mechanical conditions have a big influence on the future history of the soft, partly calcified callus. In the structure of this callus three connective tissues are represented—young fibroblasts, chondroid tissue, and amorphous bone. With the parts at rest, with the ends of the fracture in at least approximate apposition, and in the presence of a local excess of calcium, the natural evolution of this tissue is into bone. But continually recurring movement of a twisting and pulling type may lead to the formation of adult fibrous tissue, which is unossifiable, while limited movement of the shearing type, such as may occur in a fracture of the radius with an intact ulna, may produce a cartilaginous pseudarthrosis.

Beyond the established facts there has also been much speculation. The more recent papers on the subject tend to be mainly a restatement of the same facts in different terms, with a bias in favour of the biochemical, the histological, or the mechanical outlook. In MURRAY'S analysis of the causes of non-union, for example, it is obvious that he relates nearly all the factors to their effect on the hydrogen-ion concentration of the local fluids. For the freeing of the calcium from the bone-ends this reaction must, he says, be on the acid side; during the fixation process it must

[1] Arch. of Surg., September, 1934, p. 446.

revert to the alkaline side. Excessive tissue necrosis, and irrigation by such fluids as chlorinated soda, may interfere with the pH of the tissue fluids and thus with the calcification of the callus. In the discussion following MURRAY'S paper Dr. E. L. COMPERE, of Chicago, pointed, on the other hand, to the living osteoblast as the factor of importance in osteogenesis in fractures, and quoted the experiments of J. A. KEY, who found that whereas grafts of unboiled bone would lead to bridging of osteo-periosteal gaps, bags of calcium salts or boiled bone failed to do so. According to Chicago teaching the biochemical factors act indirectly through the living bone-cell. Other writers, again, prefer to lay stress on the local circulatory changes: hyperæmia causing decalcification of bone, and anæmia causing calcification. A process of dedifferentiation of the tissues in the neighbourhood of the fracture is described by R. LERICHE and A. POLICARD,[2] who regard it as the essential preliminary to repair. It is probably true, as they suggest, that further progress in our knowledge awaits the discovery of some satisfactory method of studying, in conjunction, the histological and physico-chemical processes involved in osteogenesis, especially at a fracture site.

[2] Physiology of Bone, Paris, 1926.

ANNOTATIONS

CRITICISM OF THE MATERNITY SERVICE

ON another page we print at length the report of two inspectors of the Ministry of Health into the circumstances of the death of Mrs. Taylor on May 14th at the Crumpsall Hospital, Manchester, a few hours after she had been removed from St. Mary's Hospital, Whitworth-street, where her baby had just been born. The report, while calculated to satisfy all concerned that Mrs. Taylor's death was not due to want of efficient attention, makes suggestions for the avoidance of similar incidents in the future which may have interest for the maternity service in other parts of the country. In concluding their report the inspectors recognise that the public interest and anxiety aroused by the death of Mrs. Taylor were an expression of the desire for efficiency and humanity in the administration of hospital services. But they insist that this interest should not be divorced from a corresponding responsibility to bring to bear an informed and balanced attitude of mind in dealing with the problems presented. Rumours are apt to spread, tending ever to become more sensational; fallacious deductions and allegations are too readily assumed and accepted. A grave disservice is done to all women by those who add to a mother's anxieties and apprehensions respecting childbirth and increase needlessly the heavy responsibility inevitably borne by all engaged in the practice of midwifery.

ISOLATION OF A HUMAN INFLUENZA VIRUS IN AMERICA

IN August and September of this year an epidemic of influenza occurred in Porto Rico. Specimens of sputum from typical cases were sent in 50 per cent. glycerin to Dr. Thomas Francis at the Hospital of the Rockefeller Institute, New York City. Francis[1] inoculated three of these sputa separately into ferrets under ether anæsthesia. All the ferrets showed a sharp rise of temperature in 48 hours. From one of them virus was recovered and has since been maintained by serial passage in ferrets. In the sixth passage-animal areas of consolidation were found in the lungs, and similar lesions have been constantly present in ferrets of later passages. In the course of the work one of Francis's laboratory assistants developed symptoms of influenza, and virus was recovered from his nasopharyngeal washings. The results confirm those of Smith, Andrewes, and Laidlaw[3] on the susceptibility of ferrets to human influenza, and they are important in that they provide the first confirmation of their results from another laboratory. But in so far as his ferrets developed pneumonia Francis's experience is different from that of the British workers and resembles that of Shope[3] with ferrets infected with swine influenza virus.

Independently of the recent investigations in this country[4] Francis found that mice could be infected with influenza virus given intranasally under ether anæsthesia. He was able to do this with virus which had been passed in series through only two ferrets, but has not yet recorded that mice can be infected directly from man. The pulmonary lesions in Francis's mice were like those described in these animals by Andrewes, Laidlaw, and Smith,[4] but differed in their greater severity, many mice dying within 48 hours of infection. Apparently one strain of mice in New York, the Swiss mice, were more susceptible than another. It appears then, that the American virus attacks both ferrets and mice with greater virulence than does the virus isolated in England last year; this may depend on a real difference between the two viruses or upon differing susceptibility of the experimental animals used in the two laboratories. It has been in the past a matter for conjecture whether the liability of man to many attacks of influenza depends upon the transient nature of his immunity or on the existence of different serological races of the infective agent. It will therefore be a matter of peculiar interest to learn whether or not the English and American strains of virus are immunologically identical.

DAMAGES FOR DIMINISHED EXPECTATION OF LIFE

IT will strike the public as odd that the law courts should still be disputing whether a man is entitled to damages if another person's negligence shortens his prospect of living. Until lately there was a most unreasonable rule of English law that, although in a criminal court the Crown could proceed against a murderer for felony, in a civil court the death of a human being could not be the basis of a claim for damages. In other words it was cheaper for a negligent motorist to kill his pedestrian than to cause him some non-fatal injury. In the recent case of Flint v. Lovell the plaintiff claimed damages because the day of his death had been brought nearer. He was a man of ordinary reasonable health and strength for his 69 years of age. He complained that, owing to the injuries he had received through the defendant's negligence, he had suffered severe bodily pain and

[1] Francis, T.: Science, 1934, lxxx., 457.
[3] Smith, W., Andrewes, C. H., and Laidlaw, P. P.: THE LANCET, 1933, ii., 66.
[3] Shope, R. E.: Jour. Exp. Med., 1934, lx., 49.
[4] Andrewes, C. H., Laidlaw, P. P., and Smith, W.: THE LANCET, Oct. 20th, 1934, p. 859.

mental disquietude through the prospect of an early death; "what might have been an eight to ten years' pleasant life in which he could have carried on his normal activities had," in Lord Justice Greer's phrase, "been converted into a precarious tenure not likely to exceed 12 months." As Mr. Justice Acton had said, in trying the claim, Mr. Flint had "lost the prospect of an enjoyable, vigorous, and happy old age." He had now got the certainty of additional expense for medical treatment and nursing. Mr. Justice Acton assessed the damage at £4000 (with an extra £400 for special expenditure) and the Court of Appeal upheld the award. Lord Justice Greer and Lord Justice Slesser agreed that the amount, though generous, was not so excessive as to justify reversing Mr. Justice Acton's finding; Lord Justice Roche, in a minority judgment, thought £3000 would have been enough. The Court of Appeal has now established the principle that, in estimating damages, the courts may take into account the reasonable certainty that the plaintiff's life has been substantially shortened by the defendant's negligence.

INFANT MORTALITY IN THE ANTIPODES

FOR each quinquennium from 1871–75 to 1926–30 the rate of infant mortality in Australia has been appreciably below the level of the rate in England and Wales. In the earliest quinquennium the rate in England and Wales was 153 deaths per 1000 live births, while in Australia it was only 119; in 1926–30 it was 68 in England and Wales and only 52 in Australia. New Zealand, which so far holds the "world's record" in this characteristic, shows rates still lower, only 37 per 1000 in 1926–30. In the last two or three years even these figures have been surpassed in various States. For instance, the Statistical Register of the State of South Australia [1] shows a rate of 36 per 1000 live births in 1931, 37 in 1932, and 32 in 1933, the last being only 1 per 1000 in excess of the New Zealand "record" rate in 1932. Such figures suggest that the rates of England and Wales may still be capable of a large degree of improvement. So far the trend has been curiously alike in places so far removed in space and conditions of life. In Australia, as a whole, there was, just as in England and Wales, very little change in the rate until the opening of the twentieth century, since when, in both, a continuous and rapid decline has been registered.[2] The figures for South Australia, on the other hand, show a nearly continuous fall since 1871–75. The improvement, as in England and Wales, has in the main been confined to the ages over one month. Under one month the mean rate in South Australia in 1900–04 was 33 and in 1925–29 27, a decline of approximately 20 per cent.; at ages 1–12 months the corresponding rates were 59 and 19, a decline of nearly 70 per cent. For the great majority of those dying under one month of age prenatal causes were held to be responsible. On the other hand, a decline of 20 per cent. shows that improvement is not impossible, as has sometimes been suggested, even at this early stage of life. The England and Wales' rate under one month was 32 in 1932, compared with 23 in South Australia. A much greater scope for improvement, however, exists at ages over one month, for the rate in England and Wales in 1932 was 33 and in South Australia only 14 in 1932 and 10 in 1933.

The decline in deaths from diarrhœal diseases has been peculiarly striking in South Australia. In 1910–14 the annual average number of deaths attributed to diarrhœa and enteritis at ages under one year was, approximately, 210, in 1920–24 160, in 1925–29 only 56, and in 1930–33 as few as 27. Until the last period the births were approximately stationary, and calculation gives the following rates per 1000 births for these causes 18, 14, 5, 3. In 1930–33 the rate was only one-sixth of that recorded 20 years previously. It is, perhaps, Utopian to hope that such low rates of infant mortality can be achieved in the highly industrialised community of England and Wales, but the comparison, at least, shows that there is no reason to rest content with the success at present attained in this country.

[1] Part II., Population and Vital, 1933–34.
[2] Infantile Mortality in Australia, 1906–30, by H. J. Exley, Jour. Roy. Stat. Soc., 1932, xcv., 684.

EXCISION OF THE THORACIC ŒSOPHAGUS FOR CARCINOMA

EXACTLY a year ago [1] we recorded a case of carcinoma of the middle of the œsophagus in which Prof. Grey Turner had removed the whole of the thoracic portion of the œsophagus and had fashioned a new gullet from the skin of the anterior chest wall and an isolated loop of jejunum. This operation was performed on April 28th, 1933, and the patient survived for 19 months until Nov. 24th of this year. We are indebted to Prof. Grey Turner for the following account of his recent history.

The patient has been very comfortable since the completion of the operation, and has been able to get about and to enjoy life. He could swallow food of any sort with ease, but he preferred to have it warm. A film was taken on two occasions, when he was invited to eat a high tea at the Newcastle Royal Infirmary, in order to provide a record of this unusual case. Normally he took the ordinary household meals with his family. His last meal in the day was taken at 6 P.M., three hours before he went to bed, because if he took food just before lying down there was a tendency to slight regurgitation. He was, however, able to swallow in the recumbent position or lying on his side, thus proving that the propulsive mechanism depended almost entirely on the pharyngeal muscles.

As recently as Oct. 26th he was able to travel from Newcastle by bus and appeared to be in good health. At that time he retained the 28 lb. he had gained in weight and made no complaint. But a week before death he had some precordial pain accompanied by vomiting, and after this he rapidly went downhill, becoming generally œdematous and exhibiting signs of uræmia. An examination after death disclosed chronic nephritis with secondary cardiac hypertrophy and dilatation and diffusely adherent pericardium and aortitis. There was no obvious recurrence of the malignant disease, but a doubtful area at the cardiac end of the stomach and two of the mediastinal glands are being subjected to careful microscopic investigation as is also the histology of the new œsophagus.

The first successful excision of the cancerous portion of an œsophagus was performed by Czerny in 1877. That survival for a considerable period after radical removal of a growth in this situation should still be a nine days' wonder is in itself sufficient to show how little the surgery of malignant disease of the œsophagus has advanced during a period in which much has been achieved in other parts of the body. This lack of success is attributable neither to lack of enterprise on the part of surgeons nor to the malignancy of the growth, but to the peculiar position and function of the organ attacked. As a rule the disease, if untreated, leads to death from inanition while the growth is still localised to the œsophagus; but the most carefully planned operation may fail because of the close relationship of the growth to great blood-vessels, to

[1] THE LANCET, 1933, ii., 1315.

the bronchi and to the pleural membranes, damage to any of which may prove fatal. The procedure advocated and successfully practised by Prof. Grey Turner is excision of the whole thoracic œsophagus by what he has designated the "pull-through" method, the organ being freed from its surroundings through abdominal and cervical incisions, cut through at the top and drawn out through the diaphragm. This, however, is only one step, and not the most difficult one, in the multiple stage operation which has to be undertaken to enable the patient to swallow again. At the first stage a gastrostomy must be provided; then the "pull-through" operation is carried out; thirdly, the skin tube from clavicle to costal margin must be fashioned; later still the cervical œsophagus has to be united to the upper end of the skin tube; and finally the lower end of the skin tube has to be joined to the stomach. These stages may occupy a period of rather over six months, and the whole procedure calls for supreme courage on the part of the patient and the surgeon, and the latter also requires much ingenuity and resource to overcome many unforeseen complications. On many occasions the operation has had to be abandoned at an early stage, and some of the patients have succumbed to complications after the second stage, excision of the œsophagus, has been completed. The fact that Prof. Grey Turner has been able to carry the whole procedure through successfully and to have kept the patient alive for 19 months after œsophagectomy, in spite of what would have been to most surgeons most discouraging earlier experiences, must command warm admiration. It is inevitable that the question should arise whether the end has justified the means. We know that if gastrostomy is properly performed at the right time a patient suffering from carcinoma of the œsophagus is likely to live in comparative comfort for six months, and survival for a longer period, though unusual, is not unknown. Apart, however, from mere prolongation of life, a man suffering from œsophageal obstruction is enormously benefited by an operation which enables him to swallow. This improvement is seen particularly in cases of simple stricture, in which the body-weight may be maintained after gastrostomy, but steadily increases when a new œsophagus has been made. It is only to be expected that the psychological effect of the enjoyment of eating and swallowing food once again, and the freedom from the necessity of spitting out the saliva which cannot be swallowed, must be of value. This remarkable case clearly represents a triumph for surgery at a time when its claims in the treatment of malignant disease are being challenged by irradiation.

"SYMPATHICOTHERAPY"

THOSE endonasal manœuvres, of which the purpose is to obtain reflex effects by stimulation, or sometimes by analgesia, of various parts of the nasal mucous membrane have recently been the subject of discussion especially in France, and the *Vie Médicale* has asked a large number of larnygologists for opinions on their value. Replies were received from 31 specialists, many well known by name in this country, which are printed at length, and which are well summarised by Dr. P.-E. Morhardt.[1] As might be expected in so controversial a subject, the replies differ widely in almost every particular. The methods employed include the galvanocautery, and applications of caustics, local anæsthetics, and hot or compressed air to the inferior and middle turbinals, the septum, and the region of the spheno-palatine ganglion. The diseases in which benefit has been claimed range from "spasmodic" coryza, hay-fever, and asthma, through affections of neighbouring regions such as pharyngeal cough and hoarseness, headaches and facial neuralgia, tinnitus and vertigo, to diseases of the eye and of remoter organs, bradycardia, tachycardia, angina pectoris, dysmenorrhœa, and even to the ataxy of tabes, hemiplegia, and infantile paralysis. It is not surprising that many correspondents attribute such results entirely to suggestion, and most authorities in England will doubtless share this view so far as the effect on distant organs is concerned. There remains, however, the group of affections which includes vasomotor rhinorrhœa, paroxysmal sneezing, hay-fever, and some cases of asthma, in which there is a consensus of opinion that this form of treatment gives good results in a considerable proportion of cases. It is noteworthy that most of the correspondents protest against the damage done by commercial exploitation to a form of treatment which can give excellent results in honest and capable hands. Incidentally, though this method of treatment is called "sympathicothérapie," reflex therapy would be a better term, for it is impossible to say what fibres of the trigeminal, the sympathetic, or the parasympathetic are involved in the reflexes concerned.

[1] Vie Médicale, Oct. 25th, 1934, p. 897.

INTRAVENOUS INJECTION OF ALCOHOL

SOME time ago Dr. Anastase Landau, of Warsaw, in collaboration with Drs. B. and J. Glass and others, described[1] the treatment of suppurative pulmonary diseases with intravenous injections of 33 per cent. alcohol. We understand from our Polish correspondent that the success of this treatment has been sufficient to attract attention not only in France but also in Italy and Rumania. The form of alcohol now used is a mixture of 20 parts of absolute alcohol with 80 parts of sterile normal saline, giving what is practically a 20 per cent. solution. Of this an intravenous injection of 30–50 c.cm. is given on successive days up to 20 days in all, or until the desired effect has been achieved. The kind of case Dr. Landau considers best suited for the treatment is post-influenzal broncho-pneumonia with miliary abscesses and the simple pulmonary abscess following lobar pneumonia. In the latter the outcome is good in 75–80 per cent. of the cases; in the former almost in every case. After a few injections the temperature falls to normal, the sputum becomes less purulent and less abundant from day to day. Striking results are obtained occasionally in gangrenous broncho-pneumonia. On the other hand, in bronchiectasis the results are less promising, although the treatment has its place in the exacerbations which occur from time to time. Dr. Landau's explanation of the mechanism of the treatment is the affinity of the pulmonary tissue or the pyogenic flora for the circulating alcohol which reaches the lung without passing through the liver. It is on this point that he lays great stress. Given by the alimentary route alcohol is held up by the liver often to the detriment of its own structure. As a further precaution Dr. Landau recommends the injection of 5 to 10 units of insulin each day that the alcohol is given. The same point is made in our correspondence columns by Dr. Cooke, who suggests the injection of alcohol into the median basilic vein at the onset of labour as a method of shortening and rendering painless

[1] Presse Médicale, 1931, xxxix., 523.

the second stage. He also prefers the intravenous to the oral route by reason of avoiding the action of alcohol on the liver, which, as he remarks, may in pregnancy be specially sensitive to any form of toxin. Readers may recall that this form of intravenous anæsthesia is not a new thing, for it goes back at least to the advocacy of Dr. M. G. Marin, who, after years of experimental anæsthesia on animals, anæsthetised some hundreds of patients at the Military Hospital, Mexico City, successfully in this way for various operations.[1] An opportunity was given to anæsthetists in London of seeing Dr. Marin's method put to the test[2]; some of those who were present at the demonstration may have since made trial of these injections, although there is nothing to suggest that alcohol anæsthesia will establish itself as a method of choice for routine work.

THE MORTALITY FROM HÆMATEMESIS

On p. 1271 Dr. F. F. Hellier adds another to the many papers on hæmatemesis that have recently appeared in our own columns and elsewhere. Two years ago Dr. Ernest Bulmer[4] extended his analysis of the cases admitted to the Birmingham General Hospital, and concluded that during the period 1902–31 the mortality of hæmatemesis due to peptic ulcer was 10 per cent. At the same time Dr. W. E. Chiesman[5] found a mortality of 25 per cent. among patients admitted to St. Thomas's Hospital for gross hæmatemesis or melæna. In April of this year Dr. R. S. Aitken[6] contributed figures from the London Hospital showing a mortality of 11 per cent. in similar cases, and Drs. G. Burger and S. J. Hartfall[7] discovered 22·6 per cent. of fatalities in cases admitted to Guy's for severe hæmatemesis due to peptic ulcer. Dr. Hellier's results from Leeds give a 12 per cent. mortality among 303 cases "presenting the cardinal symptom of hæmatemesis of such severity as to require hospital treatment." It would serve no useful purpose to attempt a comparison of these series, not only because the methods of their collection and presentation differ from paper to paper, but also because the conditions under which different hospitals work, the severity of the cases deemed suitable for admission, and the details of treatment must vary widely. One thing, however, is common to all five reports—a note of dissatisfaction. Even those authors who present their figures without any comment imply that the figures tell their own tale, and the tale is that the mortality from hæmatemesis is too high. Burger and Hartfall refer to the earlier statistics from Guy's Hospital, collected by Conybeare, in which the ratio of fatal hæmorrhages from peptic ulcer demonstrated post mortem to total admissions for hæmatemesis or melæna from ulcer, was found to be only 2 or 3 per cent. These figures and others from abroad were quoted by Dr. A. F. Hurst in support of the view that fatal hæmorrhage from peptic ulcer is rare—a view which strongly colours many of the present-day text-books. "Rare" is a vague word, but it now appears that fatal hæmatemesis is by no means so rare as to be negligible. Critical eyes are therefore turned on the methods used in its treatment, and it is significant that this aspect of the subject occupies more than half of Dr. Charles Bolton's post-graduate lecture on hæmatemesis which appeared in our issue of Oct. 27th. The mortality figures we have quoted make it clear that the time-honoured medical measures—absolute rest, morphia, and starvation—are not adequate, or else they are not being adequately applied. Chiesman turns tentatively again towards surgery, while Aitken urges a greater use of repeated transfusion of blood. The Royal Society of Medicine discussion on the subject, reported in these columns last March,[8] showed a distressing lack of agreement on the proper use of the methods of treatment that are available. No statistics yet published are extensive enough, or rigidly enough controlled, to give answers to the questions involved, and it seems unlikely that the answers ever will come from general hospital statistics; but if the recently awakened anxiety over the hæmatemesis mortality brings about a closer study and more careful recording of individual cases, especially of the severer ones whether fatal or not, there is hope that the problems of treatment will thereby come nearer to solution. The present situation is no great credit to medicine.

[1] THE LANCET, 1929, i., 1247.
[2] Ibid., p. 1263.
[4] Ibid., 1932, ii., 720.
[5] Ibid., 1932, ii., 722.
[6] Ibid., 1934, i., 839.
[7] Guy's Hosp. Rep., 1934, lxxxiv., 197.

PLEURISY AS A PRECURSOR OF PHTHISIS

Since "idiopathic" pleurisy has come to be regarded as a synonym of tuberculous pleurisy, great interest has attached to the prognosis. In 1910 Allard and Köster showed that in Sweden about half these patients developed pulmonary signs later. In 1927 Olaf Scheel, of Oslo, in a study of 812 patients treated for pleurisy in the ten-year period 1916–1925, and kept under observation for one to ten years, found that only 22 per cent. of them subsequently developed tuberculosis, in the lungs as a rule. The most recent Scandinavian study of this problem is still more encouraging—so much so that the unwary may be tempted to doubt its very existence. At the Nakkebölle Fjord Sanatorium in Denmark, Dr. O. Helms[9] has adopted the excellent system of keeping in touch with his ex-patients by means of questionnaires which he sends them during the first five years after discharge. In the eight-year period 1924–1931 there were 150 patients, all women, who were treated for pleurisy alone, the physical examination of the lungs, the X rays, and sputum tests showing no signs of tuberculosis. Five of the cases were bilateral, 90 were right-sided, and 60 were left-sided. In 50 cases the diagnosis of a pleural effusion had been confirmed by exploratory puncture before admission to the sanatorium, where all the patients received light baths and orthodox treatment. Its average duration was about four months, and all the patients were in good health on discharge. Two years later only 3 could not be traced. Of the remaining 147, 2 had died, 5 had been readmitted to the sanatorium, and 3 were unfit for work, the disability in one of these cases not being due to tuberculosis. After subtraction of these 10, there remained 137 who were fit for work, this fitness being only partial in 14 cases. From these figures, Dr. Helms calculates that barely 7 per cent. fell ill or died within the first two years which are supposed to be the most critical. To ascertain if matters became worse after a longer observation period, he studied by themselves 80 patients whose discharge from the sanatorium dated back more than five years. Three had died in the interval and 1 had been readmitted; the remaining 76 were still fit for work, such fitness being partial only in 7 cases. It will thus be seen that, so far from being worse, the cases kept under observation for more than five years showed a cleaner bill of health than those observed for only two years after

[8] THE LANCET, 1934, i., 572.
[9] Nord. med. tidskr., Oct. 20th, 1934, p. 1411.

discharge. Dr. Helms remarks that these findings should profoundly modify our prognosis of pleurisy, even though we continue to regard it as a manifestation of tuberculosis. In the past he has considered pleurisy alone as an indication for sanatorium treatment. In the future he intends to be more discriminative, for sanatorium treatment implies not only the loss of so many working days, but also an embarrassing stigma. On the other hand, Dr. Helms's findings may, as he himself admits, be quoted in favour of sanatorium treatment, without which many of these patients might have developed pulmonary disease. The glaring discrepancy between the findings of Allard and Köster in 1910 and of Helms in 1934 may be explained, in part at least, by the relative inadequacy of the earlier X ray examinations, as a result of which several cases with lungs already infected were probably included.

THE LEAGUE OF NATIONS AND NARCOTICS

THE supervisory body set up under the Limitation Convention of Dangerous Drugs (1931) have at their recent meeting dealt with estimates from 73 countries and 117 territories of the amounts of the several narcotics required during the year 1935. In cases in which the necessary estimates were not supplied these have been determined by the supervisory body itself. The totals will presumably fall within the world requirements laid down by the League of Nations—viz., morphine 9 tons, heroin 2 tons, and cocaine 5½ tons. The League has issued a special supplement in order to give general publicity to "the great success achieved by the League in this sphere of its activities." The use and abuse of opium itself, particularly of smoking opium, as well as of the coca leaf and Indian hemp, are not however dealt with in this document. Reference is made to some 40 tons of dangerous drugs manufactured in some 60 licensed factories; about one-half of "the basic drugs" presumably relate to preparations which are at present outside the provisions of the several conventions. The actual figures finally allocated to each country for the several scheduled drugs will be published on Dec. 15th.

In the League's *pièce justificative* just issued it is claimed that by means of the several opium conventions "a powerful instrument of international government" has been forged, "embodying a bold conception without precedent in the history of international relations and international law" and indeed that results show what the League might do in other spheres of international life—e.g., the trade in and manufacture of arms. While the licit production of narcotics would thus appear to be fairly under control, the full gravity of the multiplication of clandestine factories is emphasised; the same publication sounds a serious note of warning against undue optimism as to the future, since there is grave danger that clandestine factories might flood the world with an even greater quantity of illicit drugs than at any time in the past. The imports of acetic anhydride (suspected to be destined for the manufacture of heroin) are causing much concern, and it is stated that the quantities imported each year through Shanghai would alone suffice for the manufacture of 18 tons of heroin, while the legitimate requirements of the world of that drug do not exceed 2 tons. The closely related problem of limitation of production of raw opium and the coca shrub are, it is recalled, still engaging the attention of the Opium Advisory Committee with a view to drafting a new convention so as to prevent these raw materials from getting into the hands of the trafficker.

TUBERCULOSIS OF VOLUNTARY MUSCLE

ALTHOUGH it is not unusual for muscle to become infected from a contiguous tuberculous focus, with fistula formation, muscular tuberculosis in the sense of a metastatic hæmatogenous infection, secondary to a tuberculous infection elsewhere in the body, is rare, whilst primary tuberculosis of muscle must be exceedingly rare, if indeed it occurs at all. In reporting [1] a case of tuberculosis of the gastrocnemius muscle, Dr. H. Milch states that muscular tuberculosis is commonest between the ages of 17 and 24, that males are more frequently affected than females, that muscles of the extremities are more often involved than trunk muscles, and that injuries and excessive use seem to predispose to its development. Histologically the disease may be either of the typical giant-cell variety or of the endothelioid type; the interstitial connective tissue is first affected, the muscle tissue being only secondarily involved. From a study of the literature, Dr. Milch distinguishes three main clinical types: (1) the tuberculous nodule; (2) the cold abscess; (3) the sclerosing interstitial myositis; and to these he adds, (4) a fungous type, and (5) a pseudoneoplastic type, observed in the abdominal muscles. The disease is insidious, pain and fever being seldom found, while the general health remains unimpaired. According to Ranke, in 1922 only 55 well-authenticated cases of muscular tuberculosis, produced in ways other than by direct extension, had been recorded. A few more isolated cases have been reported since.

A LECTURE on Dosage above the Pharmacopœial Maximum will be delivered by Dr. A. F. Hurst at an evening meeting of the Pharmaceutical Society of Great Britain (17, Bloomsbury-square, London, W.C.) on Dec. 11th, at 8.30 P.M.

THE third Informal Conference of Cancer Research Workers, organised by the British Empire Cancer Campaign, will be held on Wednesday and Thursday, Dec. 12th and 13th, at the rooms of the Medical Society of London, Chandos-street, W. An informal dinner will be held at the Langham Hotel on the evening of Wednesday, Dec. 12th. Further information may be had on application to Mr. Cecil Rowntree or Dr. R. G. Canti at 12, Grosvenor-crescent, S.W.1.

LORD RIDDELL, who died on Wednesday in his seventieth year, was keenly interested in medical affairs and a welcome guest at professional gatherings. He had made himself something of an authority on the law and ethics of medical confidence and for some years he held office as president of the Medico-Legal Society. To the Royal Free Hospital, whose president he was for nearly ten years, he gave freely both of work and money, and at the time of his death he was also chairman of the London Voluntary Hospitals Committee. Among medical bodies the British College of Obstetricians owe him an especial debt, for he provided them with the house they occupy in London.

THE death of Mr. JAMES PENDEREL-BRODHURST at the age of 75, following an operation, will cause wide regret in the circle of those who knew him as leader-writer, historian of King Edward VII.'s time, and editor for many years of the *Guardian*. Our own regret is more personal, for Mr. Penderel-Brodhurst was an authority on hospitals and everything to do with them. When he left the *Hospital* he continued his work for the voluntary hospital principle in the form of contributions to our columns.

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[1] Amer. Jour. Med. Sci., 1934, clxxxviii., 410.

PROGNOSIS

A Series of Signed Articles contributed by invitation

XXX.—PROGNOSIS IN INFECTION OF THE URINARY TRACT BY THE COLON BACILLUS

In any attempt to foretell the issue of an infection of the urinary tract by the colon bacillus we have to search for answers to these questions: How often does an acute infection become chronic? Where the infection had become chronic, in how many patients did the urine become permanently sterile before the introduction of the ketogenic diet; and in how many since the use of the diet? Can failure be predicted before the diet is begun? Is failure invariably due to faulty drainage in the urinary tract? Even if the urine becomes sterile, are relapses common? Prof. Spiridion Oeconomos, in a report presented to the Congress of the International Society of Urology held at Madrid in 1930, wrote: "Dans la plupart des cas, l'infection coli bacillaire de l'appareil urinaire passe à la chronicité." Many will take a less sombre view of the patient's prospects; yet those with most experience of this particular infection are most guarded in prognosis. On the other hand, Fuller and Colebrook (THE LANCET, 1933, ii., 735) record that of 54 women to whom a ketogenic diet was given for a urinary infection in the puerperium 24 had a sterile urine within 17 days. Of the 24 successful cases 18 were infected by the colon bacillus or a nearly related organism, and two by the colon bacillus and the *Bacillus lactis aerogenes*. "As soon as the fever and most acute symptoms had subsided the patients were dieted." The work published by Fuller and Colebrook was restricted to infections associated with pregnancy, and to the acute phase of these infections. Their results are in no way comparable to those obtained in a series not restricted to women, much less to women in whom the infection was a legacy of pregnancy, a series where the infection was no longer acute but had become established as a cause of chronic ill-health. It is significant in this connexion that in 48 women treated in 1932 for a urinary infection associated with pregnancy without the assistance of the ketogenic diet, Miss G. H. Dodds found the urine sterile in half the patients after six months.

But whatever may be the prospect of an acute infection clearing up it is not in question that when once the infection has become chronic the outlook is bleak. "There is no cure for chronic cases," Bazy of Paris told the Congress referred to above, and allowing for that shade of emphasis which distends the truth in the spoken word it was the sober verdict of the Madrid Congress. The mortality is low, but in a small minority the patient's resistance is gradually undermined, the febrile disturbances become more frequent, until at last uræmia or intercurrent disease puts an end to years of ill-health. At the autopsy multiple cortical abscesses will be found in the kidneys.

Results of a Ketogenic Diet

Has the introduction of the ketogenic diet changed the outlook in the chronic phase of the infection? Few figures are yet available. Those which are tell one tale. In a communication to the section of medicine at the last annual meeting of the British Medical Association, Prof. Murray Lyon said: "Tested on a group of chronic cases which had resisted all other forms of treatment this method proved successful in about one half the patients." I have myself kept records of 100 consecutive cases dieted for a chronic infection of the urinary tract by the colon bacillus: 32 were males, 68 females. The duration of the infection varying from 30 years to six months, the minimum time that qualified for inclusion in the series, was not in itself a factor in prognosis. In 88 the urine became sterile within a fortnight, in 12 the diet failed. The history of these patients, all dieted in the past two years, is at present incomplete. In 32 per cent. of those who were treated more than a year ago there has been a recurrence of the infection. The frequency of relapses is disappointing, but the return of the colon bacillus was again successfully met by dieting, and it may be laid down that in the absence of any rational alternative the ketogenic diet has for the present replaced all other methods of treatment of a chronic infection of the urinary tract by this bacillus. The influence of faulty drainage of the tract on the results of treatment will be discussed presently, but it may be affirmed that the prospects of a patient with such an infection are, in the absence of urinary obstruction, directly proportional to his or her ability to get the diet properly carried out. Attention to detail has a full reward. Two years ago (THE LANCET, 1932, ii., 960) I pointed out the need for the limitation of fluids and for the maintenance of ketosis, not only throughout the 24 hours, but also for a longer period than is necessary to sterilise the urine. In practice these and like precautions are still commonly neglected. My results were obtained in favourable circumstances; there were no hospital cases in the series, the majority of whom were dieted in nursing homes, and the remainder—a small minority—in their own homes; in all, the details of the dieting were under my control.

Detection of Urinary Obstruction

Before the patient begins the diet the physician may be asked if an overhaul of the urinary tract is advisable. He himself will welcome such an investigation. If it reveals urinary obstruction it warns him that failure of the diet is probable, but so far as is known at present not inevitable. It warns him too of the possibility of relapses. If the patient will not submit to such an overhaul, then in the absence of any information particular to that patient the physician must fall back upon results in general. He can only say that in 88 per cent. the diet is successful.

It is true that clinical examination alone may furnish the information he requires, evidence of a renal calculus or of enlargement of the prostate or kidney. In 4 of my patients pain in one kidney obstinately recurring was the first evidence of a unilateral lesion. But more often the physician is dependent on the surgeon for evidence of faulty drainage.

The surgeon will fortify these conclusions. He contends that a chronic infection of the urinary tract by the colon bacillus will not clear up if there is a surgical lesion causing retention of urine or ulceration of the tract. He concludes that in any such chronic infection there should first be a thorough investigation to determine if there is a removable surgical condition responsible for the persistence of the infection.

There is left the patient's point of view, which is sometimes forgotten. For my own part, I do not need to imagine his feelings; I recall them. There is nothing in his daily routine which might assist him to emulate the surgeon in making light of these methods of investigation. They remain displeasing to his mind and painful

to his person. He will ask why he should submit to such discomfort when he has just been told that in 88 per cent. of those who diet the information is unnecessary.

It is the physician's office to present the issues to the patient as from the Bench, and in a form which he can comprehend. If the patient belongs to the 12 per cent. who fail to respond to the diet, or even to the 32 per cent. who eventually relapse, he will have to submit to the overhaul, because when the diet has failed the discovery and correction of urinary obstruction are left as the only hopeful alternative. If he belongs to the majority who respond to the diet and do not relapse the investigations are unnecessary. The physician cannot say in advance into which category a patient will fall. The patient should have the facts placed before him: he must decide.

Measurement of Response to Diet

The sharp contrast between the results won by treatment of a chronic infection of the urinary tract before and after the introduction of the ketogenic diet leaves the physician in suspense until he knows if a particular patient will react to the diet. I have not been able to lend the precision of statistics to the effect on prognosis of involvement of the kidney or of different strains of the colon bacillus, and in particular to the influence of these factors on the response to the diet. Of the 100 cases in my series 68 were females and 32 males. Of the 12 in whom the diet failed to sterilise the urine 8 were males and 4 females. Age has no obvious bearing on the results of dieting, save that renal inefficiency adds to the difficulties and that the frugal diet of the very old makes the ketogenic diet a burden they seldom can carry. Beyond these vague intimations based on age and sex the physician is driven back on statistics for his prognosis, when an obstructive lesion has not been excluded.

Once the diet is begun the issue is not long in doubt. An intense ketosis, conveniently measured by the ferric chloride test and a pH in the neighbourhood of 5 are the two essentials of success.

These two tests tell us all we need to know of the patient's reaction to the diet. The ferric chloride test is usually negative for a day or two, but if the test is not strongly positive by the fourth or fifth day I have learnt to be anxious about the success of the treatment of that particular patient. Or the ketosis may develop satisfactorily, but the pH may never fall to the requisite figure: the patient may strictly adhere to the prescribed diet, and yet the pH obstinately remains nearer 6 than 5. The success of the diet is not assured with the development of an intense ketosis and a pH of approximately 5. Both tests may be satisfactory for the first week, at the end of which a sterile urine may be reported, and then in the second week some compensatory mechanism in the body comes into play, the pH creeps up, and the ketosis becomes less and less. What often happens is that while the evening ketosis remains fairly satisfactory, the morning ketosis is gradually lost. I have seen an intense ketosis at 8 P.M., followed by a negative ferric chloride test at 8 A.M. If the evening urine only is examined the result may be misleading.

This secondary rise of the pH and failure of the ketosis may even imperil the success of the treatment. The cultures taken at the end of the second week may again show a moderate growth of *B. coli*. It follows from this tendency to a dwindling response to the diet as times goes on that we must get our results quickly or not at all. The patient should be launched on the full ketogenic diet forthwith. Three or four days should not be frittered away in the gradual increase of the fat content of the diet, as advocated in the American literature to avoid digestive disturbances. The urine is usually sterile within a week or ten days after the beginning of the diet. Patients can be warned at the outset that they will be on the diet for a minimum of two and a maximum of three weeks. It is seldom worth while persisting with the diet beyond that period. If we have failed then time will not bring success.

Relapses

In the thin literature devoted to the ketogenic diet I can find no mention of relapses—a singular silence on the very point which should arouse our concern, for this tendency to a recurrence of the infection fills the mind of the clinician who has much experience of the diet. Of my series of 100 cases 15 already have relapsed. This figure is plainly too low. It is significant that if patients treated during the last 12 months are excluded, there is a sharp rise in the number who relapse, from 15 to 32 per cent. Of those who relapsed 35 per cent. were males.

If the diet is relaxed when the urine is sterile in a certain number of patients *B. coli* reappears in a few days; if the diet is continued for a week after the sterile report is received this does not happen. I have no explanation to offer, but in my practice the diet is not changed for a week after the urine is sterile.

Most of those who relapse do so after some months of freedom. I am not yet able to say whether a surgical lesion of the urinary tract is invariably present in those patients who relapse. If it is, it should be removed when that is possible. If it is not, the physician may have to persuade these patients to go on the diet for a fortnight if they relapse, educating them to carry out the details of the diet as the diabetic is taught to control his own diet.

The liability to relapse should be put before the patient when the dieting is begun. He need not be discouraged. There are not many chronic infections for which we can promise a considerable measure of relief; there are still fewer in which we can say that the infection will be extirpated in the majority of patients within three weeks.

C. M. WILSON, M.D., F.R.C.P.,
Physician to Out-patients, St. Mary's Hospital.

ROYAL NORTHERN HOSPITAL.—For the year 1933 the total cost of maintaining this hospital was £109,603 and only £9000 of this was assured income. The sum of £13,000 must be raised before the end of the year if all its facilities are to remain available.

IRISH MEDICAL SCHOOLS AND GRADUATES ASSOCIATION.—The autumn dinner of this association, always a festive occasion, was held on Nov. 29th at Claridge's Hotel, the day of the Royal wedding, and a telegram of congratulation was sent to the Duke and Duchess of Kent. Colonel G. A. Moore presided. Mr. R. Lindsay Rea, who proposed The Guests, welcomed there Sir Thomas Miles, president of the Royal College of Surgeons in Ireland. Sir Thomas, in responding, said that Irishmen differed from Englishmen and Scotsmen in never boasting when abroad of the beauty or the past history of their country to foreigners; they felt it was only when speaking to a fellow Irishman that they would be fully understood. Sir William Byrne proposed The Association. In the course of a life, he said, devoted mainly to the public service, he had come to realise the regret which would be felt by all its members if the Irish members were to drop out. Col. Moore, who replied, said the aim of the association was to form a link between members of the Irish medical schools who had come to live in England. They also had the opportunity of lunching together at the annual meetings of the British Medical Association.

SPECIAL ARTICLES

MANCHESTER HOSPITALS INQUIRY

REPORT OF THE INSPECTORS

THE report of two inspectors of the Ministry of Health into the circumstances attending the death of Mrs. Molly Taylor at Crumpsall Hospital on May 14th was made public on Nov. 29th.[1] The inquiry, which was conducted by Dr. Isabella Cameron and Mr. H. J. Comyns, barrister-at-law, was opened on Sept. 20th in the Town Hall, Manchester, and occupied five and a half days. About 200 persons not engaged in the investigation attended each day. Members of the public present, of whom women predominated, comprised both critics and supporters of the hospitals, and at intervals they either applauded or dissented from the answers given by witnesses. Although the conduct of the inquiry was thus disturbed, the inspectors considered it inadvisable to impair the public character of the proceedings by having the disturbers removed.

An earlier investigation had been made in July by the board of management of St. Mary's Maternity Hospital, with the approval of the Manchester public health committee, the investigating committee being made up of Mr. W. Cobbett, C.B.E. (chairman of the Royal Infirmary), Dr. R. Veitch Clark (M.O.H. for the city), Sir Walter Moberley (vice-chancellor of the University), Prof. Miles H. Phillips (Sheffield), and Prof. W. Fletcher Shaw (St. Mary's Hospital). This committee sat in private, and when their report [2] was presented to the city council, a motion was carried asking for a public inquiry for which a petition signed by some 9000 persons had been presented to the council.

At the inquiry Mr. Leslie M. Lever (solicitor) appeared for the relatives of Mrs. Taylor; Mr. J. E. Lustgarten (counsel) for St. Mary's Hospital; Mr. R. H. Adcock (solicitor and deputy town clerk) for Manchester City Council; Miss D. Foster Jeffery (counsel) for Manchester and Salford Women Citizens' Association; Mrs. A. Barnacott and Mrs. Frank Anderson for the Women's Advisory Council of the Manchester Labour Party; Mrs. Bamber for local members of the Women's Coöperative Guild; Mrs. Grace Usher watched the proceedings for the Maternal Mortality Committee. At the opening they agreed that evidence should be taken on oath.

Outline of the Case

Mrs. Molly Taylor, a Jewess, aged 19 years, the wife of Sidney Taylor, attended the antenatal clinic at St. Mary's Hospital on Feb. 10th, March 10th, and at intervals of about a fortnight up to May 5th. The estimated date of confinement was May 16th. A contribution of £2 was paid to the hospital on her behalf. On May 11th labour pains set in, and the patient with her mother, Mrs. Mintz, arrived at St. Mary's Hospital at about 6 P.M. On her case-sheet (reproduced) it is recorded that "pains began at 1 A.M. this morning," based apparently on answers given by Mrs. Taylor and Mrs. Mintz to a question put by the house surgeon, but the evidence of Mrs. Mintz suggested that the pains began at 1 P.M. The results of abdominal and rectal examinations are given on the case-sheet, on which a pencil note at the top of the antenatal record runs "Baby born in O.P." but the space at the foot of the form headed "On Discharge" was not filled in. Dr. D. S. Brownlie, the house surgeon, examined Mrs. Taylor in the out-patient department soon after her arrival, and estimated that labour would continue for about three to four hours. The child was in fact born there at about 6.20 P.M.

One of the wards in St. Mary's Hospital, containing 21 beds, had been closed for repainting and cleaning and no bed was available for the patient. It was decided by the medical officer on duty to transfer the patient and the infant by ambulance to the Crumpsall Hospital of the Manchester city council. Dr. R. H.

[1] A transcript of the shorthand notes of the inquiry can be seen at the Manchester Town Hall at all convenient times for one month after the publication of the report, which contains frequent references to it.

[2] See THE LANCET, July 21st, p. 158.

The Case-sheet at St. Mary's Hospital

Transfer to Crumpsall. ST. MARY'S HOSPITALS. *Maternity Department.* Baby born in O.P.

Name: Molly Taylor. Age 19. Dr. F. Shaw.
Address: 45, Brideoak-street, Cheetham.

Previous pregnancies.	Measurements.		Urine.					B.P.
			1934 Date	S.G.	Reaction	Albumen	Sugar	
1. P.	I–S	10	10/2	Insuff.	Acid	Clear	Nil	120
2.	I–C	11	10/3	,,	,,	,,	,,	110
3.	Ex. conj.	8"	24/3	,,	,,	,,	,,	120
4.	D.C.*		7/4	1020	,,	,,	,,	110
5.	Bi-Tr.		21/4	Insuff.	Alk.	,,	,,	110
6.	Outlet		5/5	,,	Acid	,,	,,	110
7.								

Date of L.M. August 9th, 1933*
May 16th, 1934.

P.=primigrav. Alk.=alkaline. * R. Newton.

Antenatal Notes.

P.M.H.	P.S.H.			
Uterus	24 weeks	Vertex	Chest Heart	w.a.p.
			Lungs	w.a.p.
10/3/34	Vertex	Breasts need attention		
24/3/34	Vertex	Feels well (14)	D.C. later	
7/4/34	,,	fixing		White note
21/4/34	Vertex	D.C. please		
5/5/34	Vertex	fixed		

11/5/34. *On Admission*
pains began 1 A.M. this morning
stated water not broken

Abdominal Examination
Back to left side. vertex. head fixed
F.H.S. below umbilicus equally well both sides
P.R. os ¼ Dilated

Vaginal Examination

Time.	Examined by	Membranes	Cervix	Remarks

R. Mist cascara co ½ oz. T.D.S.

On Discharge

Mother Child

Notes made at Crumpsall Hospital

Molly Taylor.
Admitted from St. Mary's where delivered at 6 P.M. Arrived about 8 P.M.
9.15 about. called to see her: with history of considerable hæmorrhage and some clots. Pale, pulse rapid. Uterus fairly firm. Bed on blocks.

Ergotinine gr. 1/100. Pituitrin 1 c.c. } ordered.
Glucose Salines. }
Ergotinine gr. 1/100 gh.

Reported at about 3.30: Dyspnœa, excitable. Pulse very poor: Face arms and Thorax cold. Morphia gr. ¼. Pituitrin 1 c.c. Abdo not distended: Uterus not overdistended. Little external hæmorrhage. No gross signs of intraperitoneal hæmorrhage. Attempted intravenous saline via needle in left arm prevented by intense restlessness. One pint given into Rt. arm after cutting down on vein. 2 doses of M.J. Adrenalin into heart. 1/30 gr. Strychnine intravenously after saline, heart sounds being imperceptible, respiratory efforts spasmodic and slight.
Mors about 4.25 A.M.

Nattrass, resident obstetric surgeon at St. Mary's, therefore instructed Dr. Brownlie to write a letter to the medical officer at Crumpsall to say that the patient had been delivered of a child soon after arriving at the out-patient department, but that no bed was available at the hospital, and asking for her admission to Crumpsall. It was added that the patient and infant were quite fit to travel in the ambulance and that there was no tear of the perineum. The time of the patient's admission to Crumpsall is given as 7.40 P.M., and after being transferred in the reception-room from the ambulance stretcher to a stretcher used at Crumpsall, the patient was removed to a maternity ward, undressed and put to bed. She was examined on her admission to the ward by Sister Massiter who was in charge, but was not then seen by a medical officer. At about 9 P.M. Sister Massiter found her condition less satisfactory than it had been earlier and telephoned for Dr. B. R. Bramwell, the officer in charge, who ordered treatment and took additional measures when recalled in the early morning. The patient died at about 4.25 A.M.

A brother-in-law, Mr. Harry Taylor, had inquired at Crumpsall by telephone at about 10 P.M. as to Mrs. Taylor's condition and received, after a few minutes' delay for inquiries, the answer that she was very comfortable. Between 3.15 and 3.45 A.M. an inmate of the institution was despatched on foot to inform the relatives that Mrs. Taylor was gravely ill, but they were unable to reach Crumpsall before her death. Permission for a post-mortem examination was withheld by the relatives.

Allegations by Relatives and Others

The handling of the case at St. Mary's and Crumpsall Hospitals was criticised at the inquiry on 15 grounds. The inspectors deal with each of these in turn as follows :—

ALLEGATIONS 1 TO 3

That the patient should not have been transferred to another institution.

That the Departmental Committee on Maternal Mortality had indicated that patients suffering from profound shock or collapse after severe hæmorrhage may incur greater risk from removal than from treatment on the spot, although the facilities available might be imperfect. If it had been ascertained that Mrs. Taylor was suffering from shock, she should have been allowed to remain at rest, however bad the arrangements were at St. Mary's.

That no true attention was given to Mrs. Taylor before she left St. Mary's, and that she was not given the rest or nourishment she needed.

The question whether the patient could or could not have been retained at St. Mary's Hospital is, of course, one of the first importance. We recommend acceptance of the evidence tendered on behalf of the hospital that on the evening of May 11th each ward contained two patients in excess of the normal number and that the only bed available was in a septic ward. Prof. Whitehouse (Birmingham) expressed the view that on the information recorded in the medical reports he would have agreed to a transfer to Crumpsall, but not if there had been any hæmorrhage proceeding. Mrs. Hunter, organising secretary of the Women Citizens' Association, handed in replies from various hospitals to an inquiry as to how long a period should elapse before it could be considered safe to remove a woman just delivered of a child ; in most of these replies stress is laid on the point that the patient should not be removed for at least an hour after childbirth. Dr. Nattrass stated that in six months 94 cases had been transferred to other institutions before delivery, and that four patients had after delivery similarly been transferred, all of the latter cases having occurred during the period of spring cleaning which occupied five weeks. During the previous six months, about 60 cases had been transferred before delivery. We suggest that every effort should be made by St. Mary's Hospital to reduce the number of transfers to other hospitals.

The answer to the criticism that if it had been ascertained that Mrs. Taylor was suffering from shock she should have been allowed to remain at rest in the hospital is that no clinical signs of shock were at that time manifest. If however in future it should be necessary to transfer a patient to another hospital, soon after delivery, we recommend that at least an hour should elapse before her transfer to an ambulance unless the doctor in charge otherwise decides.

As respects the supply of nourishment Prof. Whitehouse agreed that within less than an hour after delivery the patient should be given nourishment. Miss Jeffery pointed out that though the birth had occurred at 6.20 P.M. no nourishment had been given until after the patient had been warded at Crumpsall at 8 P.M. Prof. Whitehouse also agreed that if between 7 P.M. and 7.40 P.M. no attempt had been made to palpate the abdomen in order to verify that the uterus was firmly contracted, this would not be right. Dr. J. S. Fairbairn also agreed that before the patient started on her journey to Crumpsall it would have been advisable to give her hot nourishment and added later that the patient should have been given, after delivery of the child, an hour's quiet rest and some food. Prof. Leyland Robinson thought that the question would depend on how much nourishment the patient had recently had, adding that it would always be desirable to make the patient comfortable. Dr. Nattrass could not say whether the patient was or was not given nourishment, but added that if she had asked for nourishment she would have got it. Nurse Parks said that she saw Sister Graham bring in a cup for the patient, but it would seem from Sister Birtwell's and Sister Graham's statement that the cup contained a dose of ergot, and that a drink of water was later given.

We recommend that, before the transfer to another hospital of a patient who has recently been delivered of a child, nourishment should be supplied to her unless a medical direction to the contrary is given.

ALLEGATION 4

That the patient was left alone with her mother in the ambulance of St. Mary's Hospital from 7 P.M. to 7.25 P.M. while the infant was being bathed.

The correctness of the statement made by Mrs. Mintz that between 7 and 7.25 P.M. she was in the ambulance alone with the patient is denied by Sister Birtwell who stated that she waited with the ambulance until Nurse Hupton came with the baby, and that she talked with Mrs. Mintz and the patient. Nurse Hupton also alleged that Sister Birtwell was in the ambulance, with the patient and Mrs. Mintz, when she brought the baby to the ambulance. The ambulance driver and attendant also deposed that a nurse remained in the ambulance till the baby was brought down.

ALLEGATION 5

That the journey by ambulance to Crumpsall was over stone setts and that during the journey no attention was given to the patient and a drink of water refused.

As respects the journey to Crumpsall, Nurse Hupton asserted that, so far as she could say, the journey was a comfortable one and that no complaint whatever was made by the patient or Mrs. Mintz. Nurse Hupton said that when Crumpsall was reached she satisfied herself by an examination that the condition of the patient was extremely good, that the uterus was well contracted, that she had very little loss of blood, and that the pulse was good. Nurse Hupton denied that during the journey the patient asked for a drink of water. She stated later that, on arrival at Crumpsall, before the ambulance doors were opened she examined the patient, took her pulse, examined the abdomen, and changed the sanitary pads. Nurse Thomas, who assisted in undressing Mrs. Taylor at Crumpsall

Hospital, deposed that she did not see any bandage or surgical dressings, although she later admitted that the pads might have been in the blankets. It appears, however, that Nurse Daft commenced the process of undressing the patient. Unfortunately this nurse has left the hospital and we were not able to reach any conclusion on this point. Nurse Hupton did not however impress us as a nurse of sufficient experience to be given charge of a patient travelling in an ambulance so recently after childbirth.

We recommend that, whenever a maternity patient is transferred by ambulance after delivery, a qualified midwife of experience should accompany the patient.

ALLEGATION 6

That on arrival at Crumpsall Hospital 20 minutes were occupied in filling particulars in forms instead of examining the condition of the patient and attending to her needs.

On the charge that valuable time was spent in filling up forms instead of attending to the patient, Mrs. Mintz in cross-examination eventually agreed that while she was giving the particulars to the porter in the lodge the patient had been taken into the reception-room at Crumpsall and placed on a stretcher on the floor, but later said that the patient was in the ambulance while particulars were given. Mrs. Mintz also alleged that the patient was waiting a good half-hour on the floor of the reception-room. Nurse Hupton stated that Mrs. Mintz was left at the porter's lodge to give the particulars, and that the ambulance proceeded to the reception-room with the patient and the nurse. She added that the patient was kept in the ambulance for two or three minutes only and was then taken into the reception-room. The patient was about 20 minutes in the reception-room before she was removed.

On the point whether Mrs. Mintz was dropped at the porter's lodge at Crumpsall Hospital, the evidence of the ambulance driver and attendant and of the porter who took the particulars did not accord with that of Nurse Hupton as they clearly stated that the ambulance did not stop at the porter's lodge, and that the ambulance attendant accompanied Mrs. Mintz to the lodge from the reception-room at Crumpsall. Miss Jeffery suggested that this discrepancy cast doubt on Nurse Hupton's statement that she had examined the patient's condition at the gates of Crumpsall. Mr. Adcock pointed out that the distance between the reception-room and the entrance gate was a matter of 20 or 30 yards only.

The porter who took the particulars alleged that not more than three minutes were so occupied. An assistant nurse, Mrs. Law, who received the patient, estimated that 10 or 15 minutes elapsed between the arrival of the ambulance and the taking of the patient to the maternity ward, but in any event we are satisfied that the supply of particulars did not cause any delay in attending to the patient's needs. In view of the importance of establishing and maintaining the identity of patients, Mrs. Law acted rightly in asking the patient her name and age.

ALLEGATION 7

That at Crumpsall Hospital a doctor was not called in till 9.15 P.M., although his note then made indicates a history of "considerable hæmorrhage and some clots."

It is true that the patient was not seen by a doctor before 9.15 P.M., but the maternity sister-in-charge, Sister Massiter, stated that both she and Nurse Daft, who was in attendance on the patient, considered that before 9 P.M. the condition of the patient was good. After 9 P.M. the night nurse, Nurse Turrell, reported to Sister Massiter that further hæmorrhage, in addition to a small blood clot discovered at about 8.30 P.M., had occurred. Sister Massiter did not take the hæmorrhage to be an abnormal amount at the time. She found the pulse not so strong as it was before. Dr. Bramwell, the medical officer in charge, was then called. He found the uterus fairly firmly contracted and the pulse good, but a little rapid. He regarded the hæmorrhage as slightly in excess of normal, but he saw no indication of a dangerous or abnormal condition. On his night round at about 11.30 P.M. the night sister—Sister King—reported to him that the patient's condition was materially unchanged. Later, she was concerned because the patient was a little restless and had not slept properly, and she called Dr. Bramwell. On arrival he found the pulse still further increased in speed and not as strong, the uterus firmly contracted, and no sign of any hæmorrhage either internal or external.

As Dr. Bramwell's notes on the clinical condition and treatment contained no reference to his having been called to the patient at 2 A.M., Mr. Lever endeavoured to show that after the visit at 9.15 P.M. he did not see the patient again until 3.30 A.M., but Sister King, Nurse Turrell, and Dr. Bramwell all alleged that the doctor was in attendance at 2.20 A.M., and remained with the patient from that time until she died.

We recommend the acceptance of the evidence that Dr Bramwell was in attendance on the patient from 2.20 A.M. to the time of her death, and we see no sufficient reason for criticising the action of the sister-in-charge, who was a qualified and experienced midwife, in not calling in Dr. Bramwell before 9.15 P.M.

ALLEGATION 8

That at 9.15 P.M. the patient's condition was serious and the relatives should have been called.

Sister Massiter denied that at 9 P.M. the patient was in a "bad way." Sister King did not consider that the patient was in a serious condition at 10.15 P.M. when she examined Mrs. Taylor, and first thought her condition to be serious at 3.30 A.M. This view is not however in entire agreement with Sister King's statement that at about 2 A.M. she thought of sending a sick note to the patient's relatives, but decided that Dr. Bramwell should first be called. Dr. Bramwell considered that the patient's condition became serious at 2 A.M., and very serious at about 3.30 A.M.

There appears to be no adequate reason for holding that the relatives should have been called at 9.15 P.M.

ALLEGATION 9

That when inquiry was made by telephone, at about 10 P.M., the relatives should have been informed of the patient's serious state, and that this omission prevented them from assisting if a blood transfusion were ordered by the doctor.

The grounds on which the telephone message of 10 P.M. was based have just been indicated.

ALLEGATION 10

That although it is stated in the Cobbett report that the relatives were sent for shortly after 2 A.M., the messenger did not arrive at the house of Mrs. Mintz until 4 A.M.

Sister King stated that she made out the summons to the relatives at about 3 A.M. Mr. Hewitt, the lodge porter, deposed that Sister King handed him the note at 3.25 A.M., and that after obtaining Mr. Taylor's address he handed it at about 3.40 A.M. to the porter whose duty it was to awaken a messenger and dispatch him. Mr. Howes, the porter in question, said that he received the note at about 3 A.M. He at once awoke a messenger, who came down about 10 or 15 minutes later. The messenger was a man said to be getting on for 60 years of age, and he returned to the hospital somewhere about 4 A.M.

It would seem that the statement of the relatives that the messenger did not arrive at their house until 4 A.M. is correct. Arrangements have since been made at Crumpsall for the transmission by telephone of such messages to the police on duty in the locality by whom the message would be delivered.

ALLEGATION 11

That when the husband (who preceded the other relatives) arrived at Crumpsall the patient had been laid out for burial and that "the doctor was lying" if he said that the patient had died at 4.20 A.M., because the

husband left Crumpsall at 4.35 A.M. and his wife had been laid out for burial.

The record by Dr. Bramwell that the patient died at 4.25 A.M. is confirmed by Sister King, who stated that the body was removed to another ward, placed on another mattress and covered with a sheet, but that it was not washed as this had been done when Mrs. Taylor was alive, nor was the hair combed before their arrival as alleged by the relative. Sister King also intimated that Mr. Taylor called within a few minutes of the death, and that the body had not then been removed from the ward in which Mrs. Taylor had died.

We see no sufficient reason for doubting the correctness of the record of the death.

ALLEGATION 12

That a cup of water was thrown by a nurse over Mrs. Mintz after she had been informed of her daughter's death.

Both Mr. Sidney Taylor, the patient's husband, and Miss Betty Mintz, her sister, stated that a cup or glass of water had been thrown over Mrs. Mintz by a nurse. The nurse in question admitted that as Mrs. Mintz was screaming loudly and could not be pacified, she splashed some water from a cup into the face of Mrs. Mintz, who stopped screaming, and that the relatives seemed grateful for this act.

ALLEGATION 13

That a telephone message should have been sent from St. Mary's to Crumpsall to say that a patient was being transferred.

Both Dr. Fairbairn and Dr. Nattrass agreed that where a hospital transfers a patient to another institution a telephone message should be sent, and Prof. Leyland Robinson stated that in Liverpool this course was adopted. The M.O.H. for Manchester also said that it would be preferable to notify a municipal hospital of the transfer of a patient and agreed that fuller information should be given than that supplied as respects Mrs. Taylor.

It appears from the evidence of Dr. Ramsay, medical superintendent of Crumpsall Hospital, that St. Mary's Hospital now send a message by telephone when a patient is transferred to Crumpsall, and we suggest that this practice should be adopted as between all hospitals receiving maternity patients.

ALLEGATION 14

That there was no record of a vaginal examination having been made at St. Mary's on May 11th, or of the patient's blood pressure, and that the space for particulars "on discharge" was not filled in.

Prof. Whitehouse expressed the view that a vaginal examination in the out-patient department would have invited the incidence of sepsis, and that the examination actually made was the better procedure. The desirability of taking the blood pressure of patients immediately after labour was repeatedly advocated by Mr. Lever, but we are not prepared to submit any recommendation on this point.

On the other hand, we consider that notes as to the condition of the patient on her transfer to Crumpsall should have been completed on the case-sheet, and that it would be desirable that a copy of this form, with further relevant notes, should accompany any maternity patient on her transfer to another hospital.

ALLEGATION 15

That a discharge book is not kept at St. Mary's Hospital, and without it the number of vacant beds on a given day cannot be readily ascertained.

The board of management of St. Mary's Hospital might well consider this suggestion as part of a reorganisation of the system of booking beds recommended later in this report.

Cause of Death

Dr. Fairbairn considered that the evidence indicated that the patient was well when she left St. Mary's and when she was taken in at Crumpsall, that her death was not due to hæmorrhage, and that obstetric shock was the most likely reason. Prof. Leyland Robinson believed that, while to some extent the cause of death remained speculative, it was probably due to delayed obstetric shock. He did not consider it just to say that anything done was responsible for the death of the patient. Prof. Whitehouse regarded the evidence as showing that the patient's condition was excellent when she left St. Mary's Hospital, that the case was quite normal at 8 P.M., and that the cause of death was obstetric shock which supervened later.

We are of opinion from the evidence submitted and in the absence of a report on a post-mortem examination that Mrs. Taylor's death was due to the condition known medically as delayed obstetric shock and that the fatal issue was neither caused nor materially affected by her transfer from St. Mary's Hospital to Crumpsall Hospital.

Administrative Arrangements

STAFFING AT CRUMPSALL

Although we do not consider that the arrangements for staffing the maternity wards at Crumpsall Hospital were allowed to act prejudicially in the care and treatment provided for Mrs. Taylor, we are of opinion that the position at this hospital was at that time highly unsatisfactory, and specific attention had been drawn to this fact by the surveying medical officers of the Ministry of Health in November, 1933. Dr. Bramwell stated that he understood that four maternity nurses had been appointed recently and that a resident obstetric surgeon had just been appointed. Although it was correctly stated at the inquiry that these new arrangements followed (in point of time) Mrs. Taylor's admission to Crumpsall, they had been proposed some months before the case of Mrs. Taylor occurred.

ALLOTMENT OF BEDS AT ST. MARY'S

St. Mary's Maternity Hospital is an old-established institution which holds a notable place in the voluntary maternity hospitals of the country and it is of repute as a training school for medical students and pupil midwives. There is an extensive out-patient department. It serves the City of Manchester which has been extended in recent years and also a large and populous area beyond its boundaries. Primarily the hospital treats complicated cases of pregnancy and childbirth, many of which are of the utmost gravity. In addition, primiparæ are admitted as accommodation permits.

We are informed by the solicitors to the hospital that the number of applications for beds for maternity patients, and the number of beds for such patients available at the hospital, were as follows:—

Year.	Applications.	Maternity beds available.
1929	1374	90
1930	1430	90
1931	1535	90
1932	1590	101

The number of beds had been increased in 1927 from 70 to 90, and in 1932 was increased to 101. In 1931, 860 women became in-patients in circumstances of emergency, and in 1932, 918 such patients were admitted to the hospital. Cases of this kind would have a first call on the beds available.

The majority of the beds are in large wards and adaptation to modern standards of ward accommoda-

tion, &c., would present numerous difficulties. Thorough cleaning and re-decoration, which are of the first importance in maternity wards as a means of prevention of septic infection, should be undertaken regularly and carried out systematically. The number of beds out of use at any one time on account of cleaning necessarily depends on the size of the ward unit. It is further restricted by that separation of patients in clinical groups which is essential in maternity in-patient practice. By an available hospital bed is meant more than a bedstead and bedding; it implies the provision of adequate air and floor space, suitable medical and nursing attendance and, as far as is humanly possible, safety from infection for the individual patient and the other patients in residence. When thorough cleaning is in progress the number of beds available is of necessity restricted and the pressure of this limitation is increased in proportion to the number of grave emergencies with which the hospital is called on to deal. Overcrowding in maternity wards and over-pressure of staff cannot be countenanced because of the ever-present danger of septic infection.

AVOIDANCE OF OVER-BOOKING

Public attention has recently been directed to the importance of avoiding the over-booking of maternity wards. The date of confinement cannot, as a rule, be predicted with strict accuracy and consequently the admission of maternity patients cannot be arranged for a fixed date. When the demand for accommodation is in excess of the maternity beds available an immediate problem arises, especially in the smaller institutions. The alternatives are (*a*) to limit the number of patients accepted, or (*b*) to book without numerical limitation and depend on making other provision (whether domiciliary or in-patient) for the individual patients for whom no bed is available at the time of application for admission. The former method is practised in many of the more recently established maternity institutions, particularly in those which admit a high percentage of normal cases. The latter method is that adopted at St. Mary's and at some other hospitals which are generally comparable in type.

In the case of the great general hospitals with maternity departments such as the municipal hospitals of Manchester the maternity beds represent a relatively small percentage of the total number of beds available, and suitable emergency arrangements can therefore be made which are impossible in smaller institutions. The position with regard to maternity in-patient provision in Manchester and in its environs and the extent to which it is used has changed materially in recent years. The number of births which took place in institutions in the city has risen steadily from 10·9 per cent. of the total births in 1924 to 40·3 per cent. in 1933. During that period the number of maternity beds in the hospitals controlled by public authorities in Manchester and in the neighbouring districts has been greatly increased. Crumpsall and Withington, which were formerly poor-law institutions, have been appropriated by the city council to the public health services, and their maternity departments are now under municipal control.

These changes are in part at least an expression of a new orientation of maternity work, and an indication of the greatly increased public responsibility for the care of the mother. It is with full appreciation of the work which St. Mary's Hospital has done in the past that we recommend its board of management to reorganise the system of booking for admission through the antenatal clinic in excess of the number of patients for whom accommodation can be provided with a reasonable degree of certainty. In dealing with applicants for admission, they will doubtless find it desirable to coöperate with other hospital authorities responsible for maternity departments in the area which the hospital serves. The possibility of further use of the extern service of the hospital and of other arrangements for domiciliary attendance will doubtless also be considered. In discussing methods of coöperation it will obviously be necessary to bear in mind that antenatal supervision should be closely associated with attendance at confinement and during the lying-in period.

We also recommend St. Mary's to appoint a member of its medical staff who is senior in status and experience to the resident medical staff to be responsible for the general administration of the hospital in its medical aspects, particularly in relation to booking, registration, admission, and discharge of patients. It is desirable that in addition to the notification on the printed form which is handed to a patient when she books a bed the attention of each patient should personally be directed to the importance of attendance at the hospital at the beginning of labour, and also to the fact that the hospital cannot guarantee admission. We anticipate, however, that with a revised system of booking the reference of patients during labour to other hospitals should be infrequent.

Recommendations

1. AS TO MUNICIPAL SERVICES

(*a*) That the present position as to staffing at Crumpsall Hospital should be reviewed by the City Council who should satisfy themselves that the arrangements for medical and nursing attendance are adequate for the number of beds now provided for maternity patients. They should also take steps to ensure that the services of the obstetric consultant are utilised fully—both in dealing with questions of administration of the maternity wards and in consultation in cases presenting difficulty.

(*b*) That the use of the municipal ambulance service in the transport of maternity cases to hospital should be extended.

(*c*) That the arrangements at Crumpsall Hospital for the dispatch of messages to the relatives of a patient should be revised.

2. WITH REGARD TO ST. MARY'S HOSPITAL

(*a*) That every effort should be made by the board of management to reduce the number of patients transferred to other hospitals by a reorganisation of the system of booking cases which should be placed under the charge of a responsible officer and that the board should confer with other hospital authorities for the purpose of securing additional coöperation with them.

(*b*) That an administrative medical officer, senior in status to the resident medical staff, should be charged with the responsibility for the administration of the hospital in its medical aspects.

(*c*) That the printed notice supplied at the hospital when a bed is booked should show more clearly that a bed is not guaranteed and that the attention of each patient should be drawn to this statement on the notice.

(*d*) That if, in an exceptional case, it should be found necessary to transfer a patient to another hospital soon after delivery ample time should elapse after delivery before her transfer to an ambulance, and that before such transfer suitable nourishment

should be supplied to her, unless a medical direction to the contrary is given.

(*e*) That when a maternity patient is transferred by ambulance after delivery a qualified midwife of experience should accompany the patient.

(*f*) That a telephone message notifying the transfer should be sent as a matter of routine when a patient is transferred to another hospital.

(*g*) That fuller records of the discharge of patients should be kept.

PANEL AND CONTRACT PRACTICE

Who Pays the Fee?

A CURIOUS problem occurred recently in a London practice in which an insurance doctor was called to a nursing-home to see a patient who was desperately ill and who died in about 14 days from the date of his admission. The doctor was informed that the patient was an insured person but no medical card was produced. Such a card would now be useless as the patient, being dead, ceases to be an insured person, and in any case he would not be able to sign it in the appropriate section. As the doctor was informed of the insurance status he would apparently not be entitled to charge the patient for his attendance privately without giving a receipt on the official form under Clause 7 (2) of the terms of service. This receipt enables the patient to reclaim the fee paid if he is found by the insurance committee to be entitled to medical benefit; he is then credited to the doctor's list and counts as such from the beginning of next quarter. But in this case, as the patient died before the middle of the quarter, his name will probably be removed owing to death before the next quarter commences. To be effective this official receipt must be presented to the insurance committee within 14 days of the payment of the fee to the doctor, together with an explanation why the medical card was not available. As in this case no fee was paid, it is open to the doctor to send an account to the executors, providing that he had handed to the patient an account in the form used when the fee is not paid in cash at the time of the first attendance. This form has to be sent by the patient to the insurance committee within 14 days of its receipt from the doctor. As the patient was alone in a nursing-home and obviously too ill to attend to such matters himself, neither of these forms could have been used. The question arises: Will this attendance be paid for, and by whom?

Certification: One More Word

Any who think that the last word has now been said on certification might do well to read the paper given by Mr. W. J. Foster, LL.B., on "Incapacity for Work within the meaning of the N.H.I. Acts," at the Medico-Legal Society last May (see THE LANCET, 1934, i., 1190), and now reprinted (Med.-Leg. and Crimin. Rev., October, 1934). He states very clearly from the legal point of view the difficulties connected with the administration of the Act; for example, it was decided as long ago as 1916 that a man cannot be "rendered incapable of work" if he is already incapacitated, but medical certificates are still frequently issued in respect of supervening illnesses. Again not many insurance practitioners appreciate the difference between incapacity *for work* and incapacity *to work*. Mr. Foster illustrated it by quoting a case in which a one-eyed workman whose loss was not apparent had been fully able to work. He sustained an accident which caused the removal of the blind eye. This rendered his condition obvious; although just as capable of work as formerly, he was quite unable to obtain work and he was held to have incapacity for work. An epileptic may have a disability of such a nature that there is in consequence an incapacity for work in the sense that the one-eyed workman was incapacitated. But he is not of necessity incapable of work in the sense entitling him to claim benefit under the Act. In the subsequent discussion it was pointed out that although doctors were not trained to logical thinking as a habit the marvel was that they made so few mistakes. Dr. J. L. Halliday, regional medical officer for Scotland, remarks (Brit. Med. Jour., Nov. 24th, Suppl. p. 261) that the medical certificate has come to be regarded as a money order. He points out that at a time when the death-rate was falling, when there was no excessive incidence of infectious disease, when the school-children were healthier, 90 per cent. of the medical practitioners in the country were continuing to give their signed opinion that the working-classes were becoming increasingly incapable of work. The certificates were personal opinions about the interpretation of an Act of Parliament; this raised the question: Do the doctors know the law? Dr. Halliday admits the difficulty of stating the construction to be placed on the term "incapable of work" and the further difficulty in determining a person's working capacity. Good working capacity, he writes, results from the harmonious functioning of the mind and body. If either or both break down and incapacity results, it is the doctor's duty to discover if there is damage to bodily structure or mental maladjustment to be investigated. Assessment of capacity may be difficult, but if all the data were available there would be little divergence of medical opinion on capacity. In an ideal system of organised medicine the certificate of incapacity would answer three questions:—

(1) Is the man presumably unfit to undertake his usual duties as a working citizen?

(2) If so, why?

(3) What action is required to restore him as soon as possible to efficient citizenship?

Such a form of certificate would tend to ensure that every known means was being used to render the unfit man fit. The problem is not merely one of improving administration but of revolutionising the part to be played by general practitioners in a world where specialists and technicians are becoming ever more specialised and technical.

A Public Assistance Panel

Subject to the approval of the Ministry of Health, the Warrington public assistance committee decided last month to inaugurate for an experimental period of two years a panel medical service, starting on Feb. 1st, 1935, to provide domiciliary medical relief and dispensing services for poor people. The engagements of two medical officers are to be terminated and all the medical practitioners in Warrington are to be invited to coöperate by joining the panel. The scale of payment has not been made public, but the terms are to be subject to revision in six months. The M.O.H. estimates that the scheme will cost the ratepayers more money, possibly in

the initial stages £500 compared with the present outlay of £180; but, as was said at the meeting where the resolution was adopted, "the committee would have the satisfaction of knowing that people would not be barred by their poverty from choosing their own doctor and having the best medicines and appliances that could be given." The example of Warrington will be watched with interest over the whole country. The apparent hardship to the district officers should be mitigated by retaining on their own lists the bulk of the patients they used to attend on the district.

PUBLIC HEALTH

Maternal Care in Monmouthshire

LAST week the Monmouthshire county council approved the scheme for providing a maternity hospital of 20–25 beds. The opportunity arose out of a gift by Sir John Beynon as a memorial to his mother of a fine mansion known as "The Coldra," situated three miles out of Newport in an estate of seven acres. Capital expenditure to the amount of £6500 has been authorised by the council for the purpose of altering and equipping the mansion for its new purpose. The costof maintaining 20 beds for a full year is assessed at £5200, of which £1000 will be returned in the form of maternity benefits under the N.H.I. Acts, apart from any additional payments made by or on behalf of the patients. A penny rate over the county would roughly cover the remainder. Need of such provision has been keenly felt for some time. There is much overcrowding in the homes, but travelling is difficult, and expectant mothers are apt to stay too long at home as the doctor has hesitated to take the risk of the long journey to Cardiff. The small local general hospitals are not so well equipped for obstetrical help, and blood transfusion is less easily available. During the last few years 16 antenatal clinics have been opened in Monmouthshire, expectant mothers have been helped by provision of outfits and extra milk, and the service of midwives has been carefully supervised. At the same time improvement in the physical health of school-girls is eliminating the severer types of rickets. In spite of these efforts, as Dr. D. Rocyn Jones has long pointed out, the maternal mortality-rate continues to rise. All except three of the Welsh counties are on the Ministry of Health's black list; the rate for Monmouthshire was 7·2 per 1000 live births last year, considerably in excess of the already high average of 5·2 for the last ten years. Of the 39 women who died during pregnancy or labour in Monmouthshire during the 12 months ended July 31st last, 17 (or 44 per cent.) were primiparæ. Dr. Rocyn Jones is of opinion that all the efforts so far made have been counterbalanced by economic difficulties, and especially by the increased abortion-rate; 10 of the 39 deaths mentioned followed abortion, and of these at least 6, he tells us, were brought about by the use of drugs or by illegal abortion. The new maternity home is to be opened next April with an annual grant of £400 from the Ministry of Health. It will be known as the Lydia Beynon Maternity Hospital.

M.O.H.'s of Irish Counties

Our Irish correspondent writes that although since 1925 it has been the duty of each county council in the Irish Free State to appoint a county medical officer of health, there are still several counties in which that duty has been neglected. A few months ago the Minister for Local Government and Public Health stated that medical officers of health had been appointed in nine of the 27 county areas. Some have been appointed in the intervening months, and the parliamentary secretary recently gave the number of county areas without medical officers of health as five. The department has approached some of the county councils within the past few weeks, but in three cases at least—in the counties of Clare, Leitrim, and Longford—the councils refused to take any steps. The entire success of the Milk Bill, now before the legislature, when it becomes law, will depend on the efficiency of the public health department in each county, and in counties in which there is no medical officer of health it cannot be more than a dead letter. The need to appoint medical officers of health has therefore become urgent, and it seems likely that, if the county councils still remain disobedient to the law, the Minister will be compelled to carry out his threat of taking the appointment into his own hands.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 24TH, 1934

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 3822; diphtheria, 1742; enteric fever, 13; acute pneumonia (primary or influenzal), 1021; puerperal fever, 32; puerperal pyrexia, 126; cerebro-spinal fever, 14; acute poliomyelitis, 14; acute polio-encephalitis, 4; encephalitis lethargica, 11; dysentery, 29; ophthalmia neonatorum, 89. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. 3rd–4th was as follows: Small-pox, 0; scarlet fever, 1877; diphtheria, 2083; measles, 186; whooping-cough, 188; puerperal fever, 18 mothers (plus 7 babies); encephalitis lethargica, 268; poliomyelitis, 10; "other diseases," 262. At St. Margaret's Hospital there were 13 babies (plus 7 mothers) with ophthalmia neonatorum.

Deaths.—In 121 great towns, including London, there was no death from small-pox, enteric fever or measles, 7 (1) from scarlet fever, 14 (2) from whooping-cough, 40 (8) from diphtheria, 40 (17) from diarrhœa and enteritis under two years, and 61 (11) from influenza. The figures in parentheses are those for London itself.

Seven great towns reported 2 deaths each from diphtheria—viz., Willesden, Bootle, Burnley, Leeds, Liverpool, Manchester, and Sheffield. Deaths attributed to influenza occurred in forty great towns, Birmingham reporting 4, no other place more than 2.

The number of stillbirths notified during the week was 254 (corresponding to a rate of 43 per 1000 total births), including 33 in London.

NEW SWEDISH MENTAL HOSPITAL.—A new State asylum is to be opened at Umea in North Sweden at a cost of some £385,000. The buildings with the staff will house about 1500 persons and there are more rooms in it than in the Vatican.

SOUTH SHIELDS HOSPITAL.—The sum of £14,000 is needed to complete the extension fund of this hospital. During the past 14 years £40,000 has been raised. The number of beds at present is 124, and it is proposed to increase the number to 174; even this will only provide one and a half beds per 1000 of the population.

CORRESPONDENCE

FITNESS FOR PUBLIC SERVICE

To the Editor of THE LANCET

SIR,—It is an anomalous and sad state of affairs that an Act of Parliament should keep out from an important branch of the public medical services many of the most suitable doctors for that service. But this misfortune is happening. Your correspondents cured by the aid of A.P. treatment point this out in your last two issues. Others restored to normal health and strength by such and by other means after suffering from pulmonary tuberculosis have likewise suffered. I have known a few. Some of them are specially gifted persons who would perhaps have filled other distinguished positions in their profession had they not been struck down by tuberculosis early in their career. They have gained thereby experience which has befitted them for working as tuberculosis specialists. Moreover, after recovery their example in such fields of work is of great moral encouragement to their patients. The public tuberculosis service should welcome them so long as the public convenience and purse is duly safeguarded. But surely that can be done without imposing so rigid a scheme for superannuation as your correspondents describe? I hope the authorities will get things altered either by arranging for a more enlightened and elastic method of passing applicants into the service, or, if necessary, by getting the law altered. The first method requires either a wider-spread knowledge about the cure and prognosis of pulmonary tuberculosis amongst those doctors who may be called upon to examine applicants or their examination alone by experts already possessing that knowledge. The second method could be inaugurated fairly easily by specialist physicians and actuaries consulting together to devise a plan which would be fair to all. I am, Sir, yours faithfully,

Mundesley, Dec. 3rd. S. VERE PEARSON.

To the Editor of THE LANCET

SIR,—I have much sympathy with your anonymous correspondents; it does seem a pity that the community should not have the benefit of the special qualifications for diagnosing and treating tuberculosis which those who themselves have suffered from it have acquired. The more so since the tuberculosis service does not, except occasionally, attract the ablest young men of our profession, unless they themselves have the misfortune to develop tuberculosis. On the other hand, one can appreciate the reasons underlying the exclusion. A person who has suffered from tuberculosis of the lungs is a risky life, as the attitude of life assurance companies testifies; he cannot be said to have his full working capacity restored for several years, if ever. It is not so much a question of reduction below normal working capacity as a reduction of the margin of safety, which becomes apparent only in times of pressure. Who is to bear the extra risk, the employer or the employee? In most cases, the latter—at any rate when he is seeking a job—is prepared to carry it if machinery could be devised to enable him to do so.

Your correspondents assign as the main difficulty the pension schemes of the local authorities, but this is much less of an obstacle than the provision made by most county councils for payment of salary for periods of sickness during service. Pension benefits seldom become available until after ten years' service. If an A.P. case has survived for that period, he has become a very small risk, and in any case his pension depends on the number of years he has served. But if during his early years of service the employing council has to pay full salary during six months and half salary for other six months, as it may well have to do in the event of a breakdown of health, it will be chary of employing any more tuberculous persons.

Unless it can be claimed that county councils have a philanthropic duty—a duty outside the ordinary canons of good business—to employ sub-standard or damaged lives, the tuberculous applicant for employment must be prepared if called upon to bear the extra risks himself. He may be fortunate enough to get an insurance company, no doubt at an increased premium, to accept him for a sickness policy, but in any case he would be wise in applying for employment under a local authority to offer to accept, in view of his health history, the conditions of service usually prescribed for temporary staff. At the end of, say, five years of good health he would have a strong case to be accepted for the privileges of permanent status.—I am, Sir, yours faithfully,

JAMES WATT.

King George V. Sanatorium, Godalming, Surrey, Dec. 3rd.

ULCERATION FOLLOWING GASTRO-JEJUNOSTOMY

To the Editor of THE LANCET

SIR,—In your correspondence columns Mr. M. J. Smyth calls attention to a case of ulceration of the duodenum after the performance of gastro-jejunostomy and goes on to say, "I considered the condition extremely rare for I had nowhere seen any mention of a similar case." Whilst the persistence or recurrence of an ulcer in the duodenum after gastro-jejunostomy is unusual it is not quite so rare as this. Sir John Bland-Sutton reported three cases in 1916, Borzeki two in 1921, and Maier one in 1922, all of which are mentioned in my book "Gastro-duodenal Ulceration," published in 1926. I reported also another example which had come under my personal notice, and in addition I have notes of three other cases upon whom I have operated.

As Mr. Smyth says, the occurrence of gastric and duodenal ulcers in combination is not so uncommon; but he does not represent the facts quite fairly when he says German surgeons have adopted gastrectomy in preference to gastro-jejunostomy as a treatment for duodenal ulcer. What they have really done is to substitute resection of the duodenum with a part of the stomach (duodeno-gastrectomy) for gastro-jejunostomy. It is true that Finsterer introduced resection-exclusion for non-resectable duodenal ulcers—i.e., removal of the pyloric part of the stomach leaving the duodenal ulcer in situ—but he never advocated it as a routine, for the results are not so satisfactory as when the duodenal ulcer itself is removed. He regards it only as a procedure imposed upon him in the face of insurmountable technical difficulties.

The real value of duodeno-gastrectomy for duodenal ulcer is not appreciated in this country. The strongest advocates of gastro-jejunostomy are surgeons who do not practise the other operation. If they did and compared their results they would unquestionably discover the greater efficacy of duodeno-gastrectomy.

The different standards of cure adopted by surgeons who publish their results is a great cause of error in assessing the merits of the two operations. The

resection operation is a tedious technical procedure and perhaps associated with a greater risk (my mortality has been over 4 per cent. in 113 cases), but is it too much to hope that this can be reduced, as was that of the lesser operation? It anyhow eliminates the mortality of operations for gastro-jejunal ulcer, and the immunity from digestive disturbance of any kind is certainly greater after the duodenum has been resected.

I am, Sir, yours faithfully,

CHARLES A. PANNETT.

St. Mary's Hospital, W., Dec. 3rd.

CLINICAL SENSE AND CLINICAL SCIENCE

To the Editor of THE LANCET

SIR,—In his recent presidential address to the Royal Society Sir F. Gowland Hopkins, discussing the endowment of medical research, had occasion to refer to the faculty which is commonly, if rather vaguely, described as "clinical sense." He quoted, in passing, the following sentence from an article once published in the *Times*: "The older physicians with minds undisturbed by a crowd of scientific facts developed a clinical sense, *sui generis*, as subtle as the sense of taste or the sense of smell, and it was on this sense that the great school of English medicine was founded." We cannot, I think, accept this dictum or continue to subscribe to the view that there exists some indefinable "intuition" or "flair" peculiar to and only discernible among those who practise medicine. There are still, it is true, those who speak with admiration of the "clinical sense," as though it really were a special sense manifest in certain chosen teachers or wise practitioners. There are, on the other hand, more critical folk who speak deprecatingly of this sense as though it were something illusory or, at the best, a species of guesswork employed in conjunction with physicianly sympathy and understanding. In point of fact it is something much better and more worthy of analysis than either of these.

Those who have witnessed in their own teachers or colleagues the use of what we will continue to refer to as "clinical sense," and those who have been at pains to review their own achievements and judgments due to its possession in however humble a degree, will, I believe, agree with me that the attribute is not something innate or intuitive, but a complex faculty based largely upon prolonged training and exercise of the known special senses. Observational ability, the observational habit, observational accuracy, and a retentive memory for observed phenomena together with an aptitude for quick sifting or correlation of experiences are the real ingredients of "clinical sense." The fact that it may, on occasion, lead to surprisingly swift and exact judgments is alone responsible for the view that these judgments are an expression of some separate and peculiar faculty. "Clinical sense," in brief, is based upon ordered intellectual processes applied to the methods of science. When a biologist through long observational training, through experiment or through some combination of these, formulates an important conclusion we do not say "what a wonderful biological sense he has"; we merely regard him as a good scientist. The biologist only differs from the physician in so far as he is able to record his observations and to explain his mental processes as he goes. The physician is constantly confronted with nature's experiments enacted before his eyes in the shape of man's reactions to disease. Through the great complexity of his problems, through the exacting and distracting character of his professional life and the necessity of earning a living, through lack of leisure for collecting and analysing his experiences, he is commonly prevented from giving the fruits of his observations to the world and from subjecting his material to critical review. He has to content himself with contributions which may be compared rather with those of the field-naturalist than with those of the scientific biologist.

Sir Thomas Lewis and the Medical Research Council have been anxious to improve the opportunities for undisturbed observation and experiment in the clinical field, and although some of us remain uncertain at present as to the best method of selecting and training workers in that field, we have little doubt that a better endowment of clinical science (the study of man in disease), as distinct from physiology and pathology, was long overdue. The great school of English medicine was founded not upon a sixth sense or the vague intuitive reactions of the older physicians but upon their steady application of the observational method to the study of disease, later correlated, whenever possible, with the results of parallel experiment and morbid anatomical study. English medicine will be the better maintained in its greatness if opportunities are given to picked men to escape the burden of practice and to devote themselves (as physiologists, pathologists, and biochemists in their several departments are already able to devote themselves) whole-heartedly to the study of their subject. Physiology and pathology live aloof from the bedside and have little present contribution to make to the investigation of symptoms and the living phenomena of disease.

The thoughtful modern physician, so far from having his mind "undisturbed by a crowd of scientific facts," is constantly disturbed by their very multiplicity, and believes that, with better opportunity, he could make contributions as valuable as those of the laboratory scientist to one of the most necessary of all the sciences—the science of human biology. His material is unlimited; he is constantly irritated by problems calling for solution; but his inquiring faculty is as constantly hampered by the claims of practice, by teaching, and by fatigue. His "clinical sense" frequently brings benefits to his patients but rarely to his science.—I am, Sir, yours faithfully,

Wimpole-street, W., Dec. 2nd. JOHN A. RYLE.

ANTIMENINGOCOCCUS SERUM

To the Editor of THE LANCET

SIR,—The leading article in your last issue on the treatment of septicæmia contains the following words: "The effect of meningococcal serum, however, does not depend, so far as is known, on any antitoxic property. . . ." May I point out that this statement is at direct variance with the experience gained at the Central Laboratory for dealing with cerebro-spinal fever among troops in training during four years of the war? The sequence of events was as follows:—

At the beginning, in the spring of 1915, none of the sera available for use in the army were of therapeutic value, and the mortality among the finest young men in the country who were in Kitchener's army and contracted cerebro-spinal fever was approximately 50 per cent. In the following winter, 1915–16, when the disease recrudesced, the late Martin Flack, who was in charge of the laboratory for dealing with military cases in the London district, one of the most energetic and efficient physiologists of his day, found that out of various specimens of serum available in the stores at the R.A.M. College, one batch possessed definite therapeutic value. By

employing this serum, while the mortality in other districts remained at the previous level of approximately 50 per cent., Flack and his clinical colleagues succeeded in bringing the mortality in the London district down to 18·5 per cent. Unfortunately, further batches of serum supplied by the same maker were found to have no therapeutic value, and accordingly, an intensive investigation was undertaken at the Central Laboratory in order to discover, if possible, the particular quality on which the potency of the successful serum depended. A large amount of "dud" serum was available for comparison, and two phials of the good serum were reserved for this assay. None of the ordinary specific antibodies beloved by academic serologists and paraded in the text-books were found to be of the slightest clinical value, for several of the "dud" sera possessed them in good quantity.

Eventually it came to light that the quality that distinguished the therapeutically potent serum from the rest lay in its capacity to neutralise the endotoxin of both Type 1 and Type 2 meningococcus, the chief strains then operating. At this point the potent serum that (thanks to Martin Flack) was in use in the London district became exhausted, and those in clinical charge at the special military hospital in Fulham for dealing with C.S.F. cases were in despair because healthy young soldiers of the finest physique—mostly guardsmen—were dying at the rate of 50 per cent. A search was made through the large stores of serum at the R.A.M. College and samples from 20 different batches of antimeningococcus serum were examined. Two batches only were found to contain anti-endotoxin, and some of this antitoxic serum was sent at once to the London District C.S.F. Hospital with the result that its therapeutic potency was fully endorsed; the mortality being reduced to 15 per cent.

In view of this experience it was clear that if the best therapeutic results were to be secured the preparation and standardisation of the serum must be undertaken by the Central Laboratory. The War Office and the Medical Research Council gave every possible help, and Dr. Stanley Griffith, of the field laboratories at Cambridge, undertook the preparation of the serum. The Army Veterinary Department supplied excellent horses and fodder. In order to study the matter on scientific lines monotypical sera were prepared, and no serum was sent out for clinical trial until it had been proved at the Central Laboratory to contain anti-endotoxin to the particular type concerned. All serum that failed to do this was poured down the sink. As the frequency of the various types operating was known, a pooled serum was made for use in cases where the particular type present was not known. The tested serum was at first put in the hands of six selected clinicians who were known to be particularly efficient, and later it was supplied for general use in the army. The results were most encouraging. The gross mortality among troops fell to 35 per cent. at a time when the mortality from the same disease among men of a similar age-period in the civilian community remained at 58 to 60 per cent. as in the previous years.

The greatest success, however, was obtained in case of Type 1, the chief epidemic strain of the meningococcus and perhaps the most fatal one. This strain had been in chief prevalence during the rising curve of the epidemic in the early months of 1915. Out of 65 cases due to Type 1 of which 48 are regarded by experienced clinicians as "fulminating, severe, or very severe," no less than 59 recovered. This serum moreover was clearly antitoxic in its action, for the clinicians observed striking and definite improvement in the condition of the patients in some cases within half an hour of its administration. It was found that the simplest and best way to prepare the endotoxin of the meningococcus for the purpose of standardising the serum was first to test strains as soon after isolation as possible on mice intraperitoneally and to select the most pathogenic ones. Old cultures were of no use. Fifty or a hundred plates of pea-extract agar enriched with 5 per cent. rabbit blood in saline lysed by the addition of ether were then made, and after 18 hours' incubation at 37° C., the growth on each plate was washed off in a minimum amount of saline, examined microscopically, then concentrated by centrifuge, and dried overnight in Petri dishes in an ordinary vacuum desiccator in the 37° C. incubator. The dried powder thus obtained was found to be fatal to mice intraperitoneally in a dose of 2 mg., but when left in contact with 0·5 c.cm. of the potent serum for half an hour at 37° C. this dose was rendered innocuous. In similar tests with therapeutically inert serum the mice were moribund or dead within 48 hours.

Further details may be seen in Special Report No. 50 of the Medical Research Council's series, or in the pathology volume of the "Official History of the War."

I am, Sir, yours faithfully,

St. Bartholomew's Hospital, Dec. 2nd. M. H. GORDON.

TUBERCULOSIS AMONG NURSES

To the Editor of THE LANCET

SIR,—In your leading article of Sept. 8th on this subject (p. 550) you quote from an article of mine, published in *Tubercle* (1933, xv., 59). In commenting on the incidence of tuberculosis among nurses, said to be between 1 and 6 per cent., you observe that it is necessary also to know the incidence among the young adult female population. You add that few have attempted to give this, and that I found the incidence in nurses not to be above the general average. This is hardly the case. It is true that I found a similar incidence of phthisis among 264 nurses admitted to hospital and among 250 general admissions of women of similar ages, but compared with groups of women of the same age and antecedents nurses come off far worse. Among 112 massage students in eight years there have been no cases of phthisis, among 511 home science students in 21 years 3 cases, and among 502 female training college students in four years 1 case.

My committee was perfectly satisfied that nurses are directly infected by patients, and we concluded that

"the young girls from whom these groups of students and nurses are drawn preserve excellent health as long as they are subjected only to healthy conditions, but if they are exposed to massive infection with tuberculosis, all of them become at least Pirquet positive, and a proportion of them, estimated at 3 per cent. per annum, become clinically tuberculous before their training is complete."

I am, Sir, yours faithfully,

Dunedin, N.Z., Oct. 23rd. D. W. CARMALT JONES.

SMOKE ABATEMENT

To the Editor of THE LANCET

SIR,—In a leading article in THE LANCET of Nov. 17th it is stated in reference to the making of by-laws under Section 2 of the Public Health (Smoke Abatement) Act, 1926, that "no local authority has yet had such by-laws confirmed." Cardiff city council adopted a by-law on July 11th, 1927, in the following terms:—

The Lord Mayor, Aldermen and Citizens of the City of Cardiff acting by the Council do by this by-law prescribe that the emission of black smoke for a period of two minutes in the aggregate within any continuous period of thirty minutes from any building other than a private dwelling house shall until the contrary is proved be presumed to be a nuisance.

This by-law was confirmed by the Minister of Health on Oct. 17th, 1927, and has since been

enforced. It is, of course, a form of by-law which had been in existence in many other towns before the Public Health (Smoke Abatement) Act, 1926, was placed on the Statute book, but I believe that more recent by-laws have been approved only with three minutes emission per half-hour substituted for two minutes. The epithet "black" is also always insisted upon, although Section 2 of the Act would appear to allow some latitude as regards the density of smoke for by-law purposes.

It appears to be true, however, that no local authority has so far been allowed to exercise its power to make by-laws for requiring new buildings, other than private dwelling-houses, to have such arrangements for heating or cooking as are calculated to prevent atmospheric pollution, a power conferred upon them by Section 5 of the Act.

I am, Sir, yours faithfully,

Cardiff, Nov. 28th. RALPH M. F. PICKEN.

DETECTION OF THYROTOXICOSIS

To the Editor of THE LANCET

SIR,—Several interesting points are raised by Dr. Brazier in your last issue. Experience has shown that the clinical value of any test for thyrotoxicosis may be gauged by its specificity in borderline cases. There can be no difficulty in diagnosing clinically, by inspection, the typical case of Graves's disease, in which the basal metabolic rate and impedance-angle values are both altered. On the other hand, in obscure cases where the basal metabolic rate and impedance angles are within normal limits, our experience in diagnosis agrees with that of Mr. Joll who remarked in your columns a fortnight ago that "the method of checking B.M.R. estimations before and after 'saturation' of the patient with iodine will . . . prove in the long run to be infinitely more exact than . . . any other test at present available." Impedance-angle determinations, as we have reported, do not alter with iodine therapy. This fact unfortunately precludes the use of impedance-angle measurements in an investigation of this kind.

Although little use is made of them in this country, satisfactory techniques are available for the determination of the basal metabolic rate on out-patients.

We are, Sir, yours faithfully,

J. D. ROBERTSON,
A. T. WILSON.

Courtauld Institute of Biochemistry, Middlesex Hospital Medical School, W., Dec. 1st.

PROTEIN SHOCK THERAPY IN TYPHOID

To the Editor of THE LANCET

SIR,—May I, through you, ask Dr. C. E. Price to be good enough to give us further information about the results of this treatment in typhoid. I draw the conclusion, rightly or wrongly, that the fatality of typhoid cases treated in this way by him and Dr. Stejskal has been zero or nearly zero. Is that correct? I should like to see reports of a series of cases in sufficient numbers and of the same clinical character, treated by protein shock and not so treated; the typhoids should be distinguished from the paratyphoids. At the present time, fortunately for us, enteric fever is not frequent enough in this country for it to be possible to obtain here the information I ask for. Some years ago I treated a few cases by what would now be recognised as protein shock. I found that the effect in any given case could not be foretold. In some cases it appeared to be good, in others it was indifferent but not harmful (see "A Text-Book of Infectious Diseases," p. 658). I think that, according to Dr. Price's experience, I did not give the protein in large enough doses nor by the best, that is the intravenous, method assuming that the intravenous injection does produce the results claimed for it.—I am, Sir, yours faithfully,

Hampstead, Dec. 3rd. E. W. GOODALL.

INTRAVENOUS ALCOHOL AS AN ANALGESIC IN LABOUR

To the Editor of THE LANCET

SIR,—May I suggest a possible method of shortening and rendering painless the second stage of labour? It is to inject at the onset of this stage alcohol into the median basilic vein of the arm in sufficient quantity to cause definite intoxication with possibly a subsequent light coma. By using this route instead of the oral one only a small proportion of the alcohol given would pass through the liver which may be sensitive to any form of toxins during pregnancy. The advantages would be:—

(1) Efficient analgesia for a sufficient period of time to complete labour in an uncomplicated case. The efficiency of alcohol as an analgesic is amply demonstrated in the out-patient department of a general hospital where the broken leg of an intoxicated patient may be placed in plaster-of-Paris without complaint.

(2) A shortening of the second stage of labour through the temporary depression of the higher psychical centres associated with fear and nervousness, enabling the expulsive mechanism to act more efficiently.

(3) A post-partum partial amnesia of the second stage.

The possible disadvantage of an increased excitability and restlessness in a certain type of patient would be outweighed by the advantages. The quantity, dilution, and technique of injection would require preliminary research.

I am, Sir, yours faithfully,

Woodlands-road, S.W., Nov. 29th. S. C. S. COOKE.

SERUM PROPHYLAXIS AND PUERPERAL SEPSIS

To the Editor of THE LANCET

SIR,—The persistent high mortality from puerperal sepsis has made even the most complacent advocate of normalcy in parturition dubious. Is it too much to hope that it may do more; that it may induce the medical man to view pregnancy in the civilised woman as a morbid state? For that, to the immunologist, is what it is. Pregnancy lowers a woman's resistance to all infections; it prepares her for the streptococcus.

The outset of the last general war found medical opinion prepared to accept tetanus complicating war wounds as inevitable, for not until 1915 was antitetanic serum used prophylactically in all cases, and the case-mortality reduced from 53 to 22 per cent. To-day any lacerated street wound is treated with antitetanic serum, and frequently anti-gas gangrene serum, although the risk of these complications is slight. But the lacerated wounds of parturition, with their high menace of streptococcal sepsis, find the doctor in a state analogous with that of the war surgeon of 1914; and streptococcal antitoxic serum, universally administered to the moribund infected, is withheld from the potential victim at a stage when it would certainly do good. There is a story of Pasteur, facing a meeting of obstetricians, then as now discussing puerperal sepsis. "But I do know what causes it" he said, and showed them a streptococcus. The bacteriologist is still showing them streptococci, and has indeed found many new types. But he has also produced antitoxic serum. Antitoxic serum administered to a rabbit is a complete protection against streptococcal toxin and

a very marked inhibitor of streptococcal infection if administered at the time of injection of toxin or streptococci. It is useless if administered an hour or two later. Antitoxic sera are not therapeutic; they are all prophylactic; they prevent further damage.

Puerperal sepsis is commonest in first labours and in obstetrical complications with instrumentation. It is quite plain that "cleanliness" and "sterility" will not prevent it; for some obstetricians at least must be clean and sterile, and puerperal morbidity shows no decline. It is not the obstetrician who is to blame; the pregnant woman is a potential septicæmic, to precisely the same degree that the war-wounded man is a potential tetanic. The right procedure is perfectly obvious, has in fact been advocated many times in your columns, and has been employed in pathetically few cases. It is to inject 10 c.cm. of antitoxic serum into every woman at the onset of her first labour, and into every woman with obstetrical complications. Later, it might be extended to all women in labour; that is too much to hope for at present. But nothing except a large-scale experiment will prove or disprove the value of the serum prophylaxis of puerperal sepsis. It is for that reason, Sir, that I write to ask for greater attention to be paid to the most promising prophylactic method at present available.—I am, Sir, yours faithfully,

London, Nov. 28th. R. J. V. PULVERTAFT.

HARVEY MEMORIAL TOWER

To the Editor of THE LANCET

SIR,—The response so far to the Appeal, which was circulated at the beginning of November to every member of the profession with reference to the above memorial, has not been sufficient to warrant the committee taking any steps at present to complete the building of the Harvey Memorial Tower.

As it was our earnest hope to do so early in the New Year, may I ask those who have not yet contributed to kindly send a donation made payable to the Harvey Memorial Tower, and addressed to me at the Royal College of Physicians, Pall Mall East, S.W.1. I am, Sir, yours faithfully,

G. DE BEC TURTLE,

Nov. 28th. Hon. Secretary, William Harvey Memorial.

DOGMA AND RESEARCH

To the Editor of THE LANCET

SIR,—I wonder if you will grant me space for a disclaimer, the need for which arises out of a review in your last issue of the well-known "Mothercraft Manual"? When referring to the diet of young children which the authoress recommends, your reviewer mentions that meat is not included until the child reaches two years of age. This, he says, may not find favour with those who are described as my "disciples." The existence of any such people is, of course, a figment of your reviewer's imagination; and though the word may have been used with kindly intention it conveys the unpleasant suggestion of my connexion with some sort of sect, occupied perhaps with the propagation of dogma, and all its attendant disadvantages. It is against this that I ask you to allow me to protest.

Lest it should seem I am unduly touchy, may I explain that the existence of a tiresome sectarianism has greatly hampered the progress of what is known as "child welfare work," and I have always done what I could to combat it. It is not much, I fear; for it is still the case that, when some point in the feeding or upbringing of a baby is to be discussed, the doctor quite commonly has first to pass the test (a test which parents and nurses claim the right to put) of whether he *believes* in Dr. X., or subscribes to the infallibility of all that Dr. Y. has laid down. Indeed only a satisfactory declaration of conformity may allow the consultation to take place at all. Yet the point at issue may well be one which calls emphatically, not for belief, but for research. Witness the recent findings of Dr. Helen Mackay on the prevalence of anæmia in infancy. While researches of that quality are still so few it is the dogmatists who flourish, not the babies.

It is true I have put on record the quite commonplace observation that many babies, while still under a year of age, will chew a piece of meat with manifest pleasure. Having watched the progress of such babies it seems to me that they derive more good than harm from the practice. To me its interest lies in the fact that what are often thought to be trivial points in dietetics sometimes turn out to contain factors of much significance. Whether the inference drawn from this observation holds good for most babies will not be established by its mere restatement, nor refuted by denunciation. Its truth or falsity, and any importance arising from it, will only appear if other observers care to make impartial records. Should that happen, and should the verdict be in accordance with my impression, it may yet be found of sufficient interest to gain inclusion in some future edition of the famous manual on mothercraft.

I am, Sir, yours faithfully,

HAROLD WALLER.

The Royal College of St. Katharine, Bromley Hall, Poplar, E., Dec. 3rd.

*** We can hardly regret having given Dr. Waller occasion for so spirited a protest.—ED. L.

BECONTREE AND DAGENHAM

To the Editor of THE LANCET

SIR,—In your review (Nov. 3rd, p. 991) of my social survey report—which is one of the most useful (to me) that it has been my good fortune to read—it is stated that "the favour shown to prospective tenants suffering from tuberculosis gave rise to an unusual demand for special treatment for which little provision was made." The Essex county council provides the treatment for the area and although I have little doubt that your reviewer has infinitely more knowledge of the provirion made in other areas than I have, I am wondering whether or not his criticism is entirely justified. There is a tuberculosis officer for this part of Essex, resident at Ilford; clinics are held regularly at Dagenham; and the Essex county council maintain a number of beds and places for adults and children suffering from tuberculosis at various sanatoria and hospitals, the majority of which are in their own area. On the other hand it is true that the supplementary services provided by voluntary agencies—the tuberculosis after-care associations—are very hampered by lack of funds, particularly in Dagenham, although even there the Essex county council pay the administrative expenses. I am, Sir, yours faithfully,

London, N., Nov. 28th. TERENCE YOUNG.

*** The sentence quoted was not meant in any way as a criticism of the provision made by the Essex authorities for the treatment of tuberculosis or as a comparison with the provision made elsewhere. The case was cited as an illustration of the difficulties of providing social service in so short a time to cope with the unusual burden imposed on the Essex council by the L.C.C.'s method of choosing tenants—for which the L.C.C. appears to have made no special provision. —ED. L.

ELECTRICAL CHANGES IN THE CEREBRAL CORTEX

To the Editor of THE LANCET

SIR,—Some recent newspaper articles have given a sensational account of the investigations which we have made in Cambridge on the electrical changes taking place in the cerebral cortex. In these articles we are deeply concerned to find ourselves credited with the discovery of the rhythm which can be detected from the human brain by electrodes applied to the scalp. This is an important discovery, but it was made six or more years ago by Prof. Hans Berger, director of the Psychiatric and Nerve Clinic at Jena, and has already formed the subject of eight papers by Prof. Berger. We have repeated and confirmed many of Berger's observations: our interpretation of the rhythm differs in some respects from his, but we wish to make it clear that our own work is of recent date and is in the main confirmatory, whereas Berger has already made a detailed study of the cortical rhythm in a very large number of cases and has shown the effect of mental work, external stimuli, sleep, drugs, &c. We hope that a forthcoming paper by us in *Brain* will remove the impression that we are in any sense the discoverers of the Berger rhythm and of its modification by mental processes.

We are, Sir, yours faithfully,
E. D. ADRIAN,
BRYAN H. C. MATTHEWS.

Physiological Laboratory, Cambridge, Dec. 3rd.

MEDICINE AND THE LAW

An Impostor's Punishment

THOUGH Eric Ronald Cox, aged 45, was put away for three years by Mr. Justice Goddard at West Riding assizes last week for frauds upon doctors, a brief account of his technique may be useful, especially if it be true, as Cox is said to have told the police inspector, that doctors are the easiest people in the world to gull and that they never refuse to give assistance. Cox, who is described as a male nurse (his name is not on the State register), called on a medical practitioner at Hull last August. He said he was a doctor and that his name was J. C. Anderson; he showed a letter purporting to have come from one of the professors at Edinburgh University whom he was on his way to see. He said he was suffering from cancer, and his use of medical terms supported his deception. He asked for something to relieve his pain and was given 5 grains of morphia. Next day the medical practitioner gave him a note to a chemist, requesting the latter to supply the bearer with such morphia as he required. The chemist telephoned to the practitioner and, on his prescription, supplied Cox with 12 one-grain tablets. A few days later Cox went to the surgery of another doctor at Leeds and told the same story. The doctor advised him to go into Leeds General Infirmary and, believing him to be in distress, gave him 5*s*. A member of the staff of St. James's Hospital, Leeds, said he examined Cox and found no cancer in the place indicated. Dr. Brisby, medical officer of Leeds Prison, told the court that he had some doubt whether Cox was a drug addict or not. Though Cox had said he had taken 6 to 8 grains, he had required none while in prison. The detective in charge of the case said that the accused came out of prison last April after serving a sentence for a similar offence. It was his practice to represent himself as a doctor and he picked up his medical knowledge by reading books. He represented himself as a drug addict in order to get money. His present sentence of three years' penal servitude temporarily relieves members of the medical profession of a pest and impostor. If a caller apparently about 48 years of age tries them with this story towards the end of 1937 and after, they should not forget to make full inquiry.

Verdict of Neglect against Herbalist

At an inquest at Battersea last week upon the death of the wife of James Ballard, a herbalist, of Gassiot-road, Tooting, who died a few weeks after her marriage, the jury returned a verdict that death was due to strangulated hernia and was accelerated by her husband's neglect, but that the neglect did not amount to gross neglect. The husband said he had treated his wife for rupture; she had made him promise on their marriage that he would never call in a doctor. Sir Bernard Spilsbury said the strangulated hernia had been progressive, becoming more serious for the last five days. An operation could have cured her, up to the last day; probably by that time the position was so serious that operation might have been risky. Strangulated hernia, unrelieved by operation, was bound to be fatal. Possibly in the earlier stage manipulation might have reduced it; otherwise an operation was the only possible cure. The proportion of cures was large—something like 90 per cent.—where operation was performed early. Apparently the herbalists seized the occasion to advertise an appeal for funds to establish a London herbalist hospital where treatment would be given free to the poor. The coroner said that he had received a large leaflet in this connexion and that another was decorating a motor-car in the street outside the court. He regarded the proposal as a retrograde step of a disastrous character. People could not properly treat disease without the knowledge obtained by adequate training in medicine. However excellent their intentions, people without proper medical education would be working in the dark.

Swab Found in Small Intestine

An unusual theory was advanced at a Hull inquest on Nov. 27th to account for the presence of a swab in the patient's abdomen. He underwent an operation last August on admission to hospital with peritonitis and appendicitis. The operating surgeon thought he would not recover, but, after a week's serious illness, he made progress and, before he left hospital, he was walking about with the wound healed. He was readmitted on Nov. 21st, complaining of severe pain. Operation disclosed a kink in the small intestine from which a swab was removed; the patient died next day. Dr. Macrae Tod, medical officer at the Anlaby-road Hospital, Hull, said that, improbable as it might seem, the swab might have been swallowed. There was nothing in the previous operation that necessitated the use of the swab; it could not then have been put in the position in which it was found, since there was no sign whatever of a breach in the wall of the bowel. There would not have been convalescence after the first operation if the swab had then been in the abdomen. Dr. Philip Science, assistant medical officer, who had made a pathological examination, suggested that the swab had been swallowed within 48 hours of the second operation or less. After other evidence the coroner said the swab might have some association

with the kink but was not the direct cause of the obstruction. He was satisfied that the swab was not left in the abdomen at the first operation and that its presence could not be associated therewith. An open verdict was recorded.

Murder "in Mercy"

In a pathetic case at Leeds assizes Mrs. Brownhill was found guilty of murdering her 30-year-old imbecile son. She had devoted her life to him day and night; everything had to be done for him, and she did it. She was herself ordered to undergo an operation last September; she knew it would be serious, but she said she would not mind except for her son. One evening the son did not appear and Mrs. Brownhill said, "I have just put him to sleep; I gave him 100 aspirins and then placed the gas tube in his mouth." There was no prospect of the charge being reduced to manslaughter, nor was there any chance for a plea of insanity, and Mr. Norman Birkett's eloquence in defence was presumably directed towards securing from the jury the strongest possible recommendation to mercy. This the jury gave. It was obviously unthinkable that the death sentence should be carried out and the Home Secretary has already recommended a reprieve. Mr. Justice Goddard explained to the jury that the time may come when it may be the law of this country that an imbecile may be sent to a merciful death; that was not yet the law; nobody, not even a doctor, had the right to do what Mrs. Brownhill had done. "Neither you nor I have the right to make laws; we must take the law as it is." Called upon after verdict and before sentence, Mrs. Brownhill said, "I did it in mercy."

Dentist and Cosmetic Surgeon

An inquest was held at Paddington last week upon a woman who gassed herself in a London hotel apparently in disappointment at the non-success of beauty treatment which she had been undergoing. Mr. John Cornelius Bell, who had treated her, was asked by the coroner (Mr. Ingleby Oddie) why he called himself a qualified dentist and plastic surgeon when he had no surgical qualification. Mr. Bell said there was no particular rule about it. "Plastic surgery," said Mr. Oddie, "is a thing which requires the highest form of skill; it means replacing noses and ears; you don't do that kind of thing, do you?" "No," said Mr. Bell, "I do the rejuvenation part." Asked if he was not really a beauty specialist, he preferred to call his work cosmetic surgery. He explained how he treated "dropped faces" by a slight incision alongside the ear and by drawing up the skin. He had given the deceased this treatment for a fee of 20 guineas. He had afterwards given her treatment for baggy eyes, removing a little strip of skin to tighten up the face; his fee for this was 20 guineas. He had also treated her for "falling in" of the gums under the nostrils; for this a compound was injected under the skin.

There is no need to take too seriously the cosmetic surgery of a Dentist 1921. The use of the description "surgeon," with whatever prefix, by a man who has no qualification in surgery is, even if technically legal, a matter of taste. As for the law, it is perhaps relevant to mention Section 27 of the Dentists Act of 1878 which explains that a certificate under that Act gives no right to assume a title implying that the person named is by law recognised as a practitioner in medicine or general surgery. Section 4 of the 1921 Act prohibits the use of any title or description reasonably calculated to suggest that the person concerned possesses a professional qualification other than that which he in fact possesses. Section 4 (unlike Section 40 of the Medical Act) does not contain the words "wilfully and falsely." An anæsthetist assisting a dentist in cosmetic surgery might be regarded as covering an unqualified practitioner. The "authority" for a registered dentist to be in possession of dangerous drugs extends only for the purposes of his practice as a dentist.

THE MEDICAL DIRECTORY

THE ninety-first annual issue reaches us in good time (Dec. 4th), and with a pleasant feeling of freshness, for the title-page and some of the earlier sheets have been reset in new type. The directory now contains 57,128 names, being 649 more than last year. The distribution of practitioners follows the tendency of recent years: there are 154 more names in London and 507 in the provinces, while Ireland has dropped by 104; Wales has 6 fewer, and the Services 16 fewer. The maintenance of the position of the directory depends on its accuracy, and this issue shows no relaxation of effort in keeping every section scrupulously up to date; those who refer to it for the latest changes of address should not overlook pages 2210–13 containing alterations made after the rest of the directory had gone to press. But we cannot find any mention of the Post-Graduate School at Hammersmith, a big event of 1935, although it is given as the address in one or more entries. It is not the fault of the editors that the composition of the Dental Board is already out of date. We cordially commend the volume as a model work of reference. The price remains unchanged at 36*s*.

THE MEDICAL REGISTER

ORDERS for the office edition of the Medical Register, 1935, at the special price of 10*s*. (post free) must be received not later than Dec. 31st. This office edition does not contain reprints of the Medical and Dentists Acts and other preliminary matter, but it includes the same entries relating to registered medical practitioners as are contained in the ordinary edition. The Council is also prepared to supply on application monthly lists of names added to, and removed from, the Register. Particulars of the terms and conditions from the Registrar of the Council, 44, Hallam-street, London, W.1.

BRITISH INSTITUTE OF PHILOSOPHY.—An address will be given by Mr. H. Levy, professor of mathematics at the Imperial College of Science and Technology, entitled Science and Philosophy in Nature, at University College, Gower-street, London, W.C., on Tuesday, Dec. 11th, at 8.15 P.M. Prof. E. A. Milne will take the chair. Application for cards of admission should be made to the director of studies at University Hall, 14, Gordon-square, W.C.1.

JEWISH HEALTH ORGANISATION OF GREAT BRITAIN. A course of five lectures will be given once a month by medical men under the auspices of this organisation on Thursdays, at 8.30 P.M., at Bayswater House, 11, Blenheim-crescent, London, W. The first lecture will be given by Dr. Y. Krupenia on Diseases Common Among Jews, on Dec. 13th. A second series of lectures is being held at the same time on Mondays at the Synagogue Hall, Harley-street, Bow, E.3, and the next lecture in this series, by Dr. M. Mitman on Fevers: their Danger and their Prevention, will be on Dec. 31st. The lectures are open without fee to all. Further information may be had from the secretary of the organisation, Woburn House, Upper Woburn-place, W.C.1.

OBITUARY

AUGUSTINE GRIFFITH, M.D. Lond.

Dr. Griffith, who died at Bath on Nov. 11th, aged 68, retired three years ago from his post as medical officer of health for Hove, which he had occupied for 32 years. A student of University College, London, he graduated M.B. with honours in 1891 and proceeded later to the M.D. degree, taking also the M.D. (State Medicine) in 1894. Having chosen institutional work he was in succession assistant medical officer at the county asylum, Lancaster, and the borough asylum, Nottingham, and later resident at the Nottingham Fever Hospital. In 1899 he was elected to his position at Hove, the only break in his long service occurring when he served three and a half years at Salonika. Dr. Griffith was both efficient and popular as M.O.H. and was justly proud of the fact that his relations with his colleagues in practice were always cordial, a fact which was endorsed by a presentation made to him on his retirement.

WALTER GEORGE LOWE, M.D. Lond., F.R.C.S. Eng.

Dr. W. G. Lowe, whose death took place at the advanced age of 86 at Birchington on Oct. 21st, was born at Burton-on-Trent, the scene of more than 50 years of his professional life. Son of Dr. George Lowe of that town, he was educated at the local grammar school and at Epsom College, proceeding for his medical training to St. Bartholomew's Hospital. He graduated in London in medicine in 1870 and proceeded to the doctorate in 1876, having in the meantime obtained the Fellowship of the R.C.S. Eng. After holding house appointments at St. Bart.'s he joined his father and brother Charles in partnership at Burton, becoming surgeon to the infirmary. He was put on the commission of peace and was prominent in local movements of benevolence and charity. He was also an active churchman, doing much voluntary work, and after he retired from practice to make his home at Birchington he became secretary of the parochial and a member of the diocesan council.

THE LATE DR. STRICKLAND GOODALL

Dr. Justina Wilson writes the following as an addition to the memoir published last week: "As one who was privileged to assist Dr. Strickland Goodall for over 14 years in his work in the out-patients' department of the National Hospital for Diseases of the Heart, I should like to add a few words of tribute to the memory of a man by whose death cardiology has lost a distinguished worker. He was only 60 when coronary disease cut him off, after long months of suffering, nobly borne, and his untimely death is a deep sorrow to his friends, and a real loss to medicine. The students of cardiology that he gathered round him at the Heart Hospital will never forget the inspiration of his teaching, his knowledge and his genius for diagnosis and prognosis, and his resourceful and fruitful methods of treatment. His large practice included every class of society and all his patients loved him, for his deeds of kindness were countless. He worked to the point of exhaustion and had no leisure for recreation, but after the most fatiguing day at hospital, he was neither impatient nor hurried. He was always ready to give ungrudgingly to others from his storehouse of experience; his advice was always essentially practical. It is a misfortune that he never had time to write the book that he had in mind."

DR. ALISTAIR SIM GARDEN who died at Southport on Nov. 10th, graduated in medicine at Aberdeen in 1906, and made a special study of obstetrics at the Coombe Hospital, Dublin. He then went out to Ceylon where he joined the staff of the General Hospital, Colombo, and was acting also as anæsthetist. As an officer in the Ceylon territorials on the outbreak of war he was given rank as temporary captain in the R.A.M.C., and served in France until the Armistice, when he settled in Southport, devoting himself especially to midwifery and diseases of children. He was obstetrician in charge of the Christiana Hartley Maternity Hospital and surgeon to the Bradstock Lockett Orthopædic Hospital for Children. In his younger days Dr. Garden was an all-round athlete, representing the University of Aberdeen both in rowing and football.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS

Osteopathy Bill

ON Wednesday, Nov. 28th, in the House of Lords Viscount ELIBANK introduced a Bill for the regulation of the practice of osteopathy and to prescribe the qualifications of osteopathy practitioners. The Bill was read a first time.

Supply of Milk to Juvenile Unemployed Persons

In the course of the debate in the House of Commons on Dec. 3rd on the second reading of the Depressed Areas Bill, Mr. OLIVER STANLEY, Minister of Labour, stated that he had provided that the scheme for cheap milk which was now current in the schedules should be extended to the junior instruction centres. There was the further proviso that in any case where a medical certificate was obtained—members would understand that, now that these boys and girls were brought into these centres, they must be able to keep some medical control over them—of evidence of malnutrition, he had made arrangements that they should then be supplied daily with two-thirds of a pint of milk free.

The Bill was read a second time by 273 votes to 50.

HOUSE OF COMMONS

WEDNESDAY, NOV. 28TH

Officers and Men Discharged from Army Medically Unfit

Mr. WHITESIDE asked the Financial Secretary to the War Office the number of officers and men discharged from the Army as medically unfit during the last 12 months for which statistics were available; and the number of those who were in receipt of pensions.—Sir GEORGE PENNY (Comptroller of the Household) replied: Twenty-three officers were invalided from the Army during the 12 months ending Sept. 30th, 1934: 19 of these officers are in receipt of retired pay which, in eight cases, contains an element in respect of disability attributable to service. As regards other ranks, 1730 applications for disability grants were received during this period. Pension was awarded in 319 cases and gratuity in 799 cases, the bulk of the latter being cases not attributable to service.

Mr. WHITESIDE: In view of the apparent uncertainty which exists in regard to the payment of compensation

consequent on dismissal through sickness will the hon. gentleman convey to the Financial Secretary the desirability of taking steps to see that all men are made cognisant of this fact?

Sir GEORGE PENNY: I will convey the request.

Milk for Schools in Lanarkshire

Mr. ANSTRUTHER-GRAY asked the Secretary of State for Scotland when the scheme for milk in schools would come into full operation in Lanarkshire.—Mr. SKELTON (Under-Secretary of State for Scotland) replied: Lanarkshire Education Authority have decided to adopt the scheme for milk in schools. They are at present engaged in making the necessary arrangements with distributors and it is fully expected that the scheme will be brought into operation when the schools reopen after the Christmas vacation.

Motorists and Pedestrian Crossings

Dr. SALTER asked the Home Secretary whether he was aware that many motor drivers ignored the pedestrians' right of way on the uncontrolled crossings recently instituted; whether, seeing that such neglect or refusal to stop had resulted in the occurrence of a considerable number of accidents, fatal and otherwise, actually on the crossings themselves, he would give instructions to the metropolitan police energetically to enforce the regulations relating to crossing-places for foot passengers; and whether he would have plain-clothes constables employed with a view to detecting offenders and instituting prosecutions.—Sir JOHN GILMOUR replied: Yes, Sir. I am aware that all motor drivers do not yet conform with the requirements of the Pedestrian Crossing Places Regulations made by my hon. friend, the Minister of Transport, and that a number of accidents have occurred at uncontrolled crossings. The metropolitan police have received full instructions on the subject of the enforcement of these regulations. Some thousands of cases of infringement have been dealt with by warning and proceedings have been taken in cases where there was evidence of dangerous or careless driving. The Commissioner has been giving close attention to this question. The public have now had ample time to familiarise themselves with the requirements, and in the Commissioner's view—in which I entirely concur—the time has come when more active measures by way of prosecutions must be undertaken for securing compliance with the regulations. In the plans which have already been prepared for this purpose plain-clothes officers in addition to uniform police will be employed.

Replying to further questions Sir JOHN GILMOUR said that the whole question was being carefully considered and he would make no difference between pedestrians and motorists.

Disease-carrying Persons

Mr. TEMPLE MORRIS asked the Minister of Health if his attention had been called to the increasing number of so-called disease-carrying persons; whether he had any statistics on the subject; and what diseases could be carried and were carried by individuals.—Sir HILTON YOUNG replied: I am advised that there is no evidence that the number of disease-carrying persons is increasing, but no doubt in recent years improvements in bacteriological and serological technique and their wider application in public health practice have enabled the presence of such persons to be more readily discovered. No national statistics are available on this subject, but I understand that the results of many special inquiries, both at home and abroad, have been published. I am advised that present knowledge suggests that most infectious diseases may be carried in this way.

THURSDAY, NOV. 29TH

Anti-gas Exercises for Children

Mr. JOHN WILMOT asked the Home Secretary whether his attention had been called to the fact that the Camberwell Division of the British Red Cross Society recently organised a gas-drill demonstration for children at which gas masks and smoke bombs were used; whether such exercises were being carried out with his knowledge and approval; and whether it was proposed to extend them.—Captain CROOKSHANK (Under-Secretary, Home Office) replied: My right hon. friend saw an account in the press of a demonstration of this character to which no doubt the hon. Member refers. Exercises in anti-gas measures conducted by the British Red Cross Society do not require to be approved by my right hon friend, nor is he consulted beforehand. My right hon. friend has no information as regards the last part of the question.

Therapeutic Value of Waters at British Spas

Captain ERSKINE-BOLST asked the Minister of Health whether he would consider the desirability, provided no expense was involved, of causing a thorough examination to be made into the therapeutic value of waters at British spas with a view to giving official recognition thereto and thus discouraging the unnecessary use of foreign spas.—Sir HILTON YOUNG replied: Proposals on the lines of the question have already been made to me, but after full consideration I came to the conclusion that the suggested examination would make no substantial addition to information already available.

Free Milk for School-children

Sir R. ASKE asked the Parliamentary Secretary to the Board of Education whether he would consider the desirability of introducing legislation which would authorise local education authorities to provide free milk to children attending public elementary schools in all cases where the parents of such children had been unemployed for more than six months.—Mr. RAMSBOTHAM replied: As the existing law makes it possible to provide free milk for all necessitous children who are unable by reason of lack of food to take full advantage of the education provided for them my noble friend is not satisfied that it is necessary to introduce legislation which would enable free milk to be given to all children of parents who have been unemployed more than six months irrespective of the physical condition of the children. The Board have made it clear in their Circular 1437 that in their opinion children should be selected for the provision of free meals of milk who show any symptoms, however slight, of subnormal nutrition.

MONDAY, DEC. 3RD

Proposed Census (1936)

Sir ARNOLD WILSON asked the Minister of Health whether it was proposed to make an Order in Council, under the Act of 1920, for a census in 1936; and, if so, whether he would introduce legislation requiring local authorities to permit census service on the part of their officials as a condition of receiving further grants under the Derating Act of 1929.—Mr. SHAKESPEARE (Parliamentary Secretary to the Ministry of Health) replied: My right hon. friend hopes to be in a position to make a statement on this subject in the near future.

Inquiry into Death of Mrs. Taylor

Mr. RHYS DAVIES asked the Minister of Health whether the report on the Mrs. Taylor case, sent by him to the authorities in Manchester, was an exact copy of that received by him from his two investigators; and whether he would place a copy of the report in the library of the House.—Mr. SHAKESPEARE replied: The report sent to Manchester was the report submitted to my right hon. friend for publication by the two investigators. A copy is being placed in the library.

Maternal Mortality

Mr. HERBERT WILLIAMS asked the Minister of Health if he could furnish any explanation of the wide differences in the maternal mortality-rates of 1000 births in the following urban districts of not dissimilar characteristics: Rochdale, where the rate was 2·71, Huddersfield, where it was 8·81, Cardigan, where it was 9·60, and Merioneth, where it was 4·80.—Mr. SHAKESPEARE replied: My right hon. friend is not at present in a position to explain these differences, but, as my hon. friend is aware, special investigations are being directed into the circumstances of the areas where there is a persistently high maternal mortality-rate.

Methylated Spirit Drinking

Sir ARNOLD WILSON asked the Home Secretary whether his attention had been drawn to the increase of convictions for drunkenness reported to have been due to the drinking

of methylated spirits in England and Wales from an average of 497 cases for the years 1920 to 1933 to 596 cases for 1932 and 683 cases for 1933; whether legislative or other action was contemplated; and what had been the result of the experiment which was initiated on the 15th March last with the object of rendering surgical spirit undrinkable.—Sir JOHN GILMOUR replied: As regards the first two parts of the question, I am aware that the figures of convictions have increased in recent years, but I would point out that in 1933 they amounted to less than 2 per cent. of total convictions for drunkenness. No special action in the matter, so far as England and Wales are concerned, is at present contemplated by the Government. As regards the last part, no information is as yet available to indicate the effect of the new denaturant.

TUESDAY, DEC. 4TH

Children Leaving School and Health Insurance

Mr. LLEWELLYN-JONES asked the Minister of Health whether he had considered representations from different organisations connected with the administration of national health insurance advocating that the National Health Insurance Act, 1924, should be amended so as to bring within its scope all children as soon as they left school and entered into insurable employment; and whether he was prepared to take any action in the matter.—Mr. SHAKESPEARE replied: I would refer the hon. Member to the replies given on April 19th and July 17th last. The hon. Member can be assured that the matter is not being overlooked.

MEDICAL NEWS

University of Oxford

In a congregation held on Nov. 24th the following degrees were conferred:—

D.M.—H. W. Allen.
B.M.—A. G. Palin and Renatus Kempthorne.

University of Cambridge

On Dec. 1st, the following degrees were conferred:—

M.D.—T. G. Reah.
B.Chir.—C. E. P. Markby and W. F. Richards.

University of London

The Paul Philip Reitlinger prize, offered this year for the best essay embodying the result of some research work on a medical subject, has been awarded to Edward Graham Murphy, M.Sc. (Physiology), a student of University College, for his essay on the behaviour of liver glycogen in experimental animals. The prize, of the value of £30, was founded with funds given to the University by Mr. Albert Reitlinger in memory of his son, a student of Middlesex Hospital medical school.

On Nov. 21st in the faculty of medicine W. A. Gray of University College Hospital medical school was awarded the degree of Ph.D. in pathology.

At recent examinations the following candidates were successful:—

D.P.M.

W. E. McIlroy, J. H. Malloy, and R. W. Maxwell (with special knowledge of psychiatry); and R. M. Norman (with special knowledge of mental deficiency).

University of Dublin

At recent examinations at the School of Physic, Trinity College, the following candidates were successful:—

M.CH.

J. E. Ellison.

FINAL EXAMINATION FOR THE M.B., B.CH., B.A.O. (PART II.)

Medicine.—H. D. O'Brien (passed on high marks), D. J. Bradley, Doris E. Morton, T. D. O'C. Donelan, C. J. Vaughan, H. M. Glover, H. A. Wells, Joseph Sorett, Patrick O'Brien, R. I. Shier, A. R. S. Jessop, F. J. B. Convery; and C. O. Greer and H. S. J. van Niekerk (old regulations).

Surgery.—H. D. O'Brien (passed on high marks), Doris E. Morton, Mary E. Mansfield, Marie J. S. O'Toole, A. C. Pilkington, H. A. Wells, I. A. Walsh, Sheila K. Henderson, H. S. J. van Niekerk, J. F. Q. Conolly, T. D. O'C. Donelan, A. R. S. Jessop, J. F. Harbinson, Patrick O'Brien, C. O. Greer, D. J. O'Shaughnessy, and S. M. Freedman.

Midwifery.—J. N. P. Moore, J. T. Wellwood, Maurice Marmelstein, D. G. Walker, J. C. Gaffney, R. H. Pratt, J. R. Shapiro, L. W. M'Caughey, J. R. M'Elroy, D. P. Burkitt, H. C. Bourke, R. L. Oakes, F. J. C. Loughran, R. C. O'Grady, G. W. M. Elliott, Harold Pringle, E. S. Dorman, J. R. Kellett, Muriel E. Wallace, Maureen C. E. Gore-Grimes, R. A. Bond, and P. X. O'Dwyer.

Post-graduate Courses in Berlin

International courses are to be held in Berlin on the following subjects: internal medicine (March 4th to 9th), disturbances of metabolism and of the glands of internal secretion (March 11th to 16th), radiology (March 18th to 24th), urology (March 25th to 30th), industrial disease (April 1st to 8th), surgery (April 29th to May 4th). Monthly courses in all the special departments, including practical work, will also be held. Particulars of all these courses may be had from the information bureau of the Kaiserin Friederich-Haus, Robert Koch-Platz 7, Berlin, N.W.7.

Royal Faculty of Physicians and Surgeons of Glasgow

At the monthly meeting of the faculty, held on Dec. 3rd, the following were admitted to the Fellowship: John Glaister, M.D. (Glasgow), Farquhar Gracie, M.B. (Bearsden), David Lamb, M.B. (Glasgow), William Thompson Wotherspoon Paxton, M.B. (Glasgow), Horace Minton Shelley, M.R.C.S. Eng. (London), and Hans Stubbe, M.B. (London).

Society of Chemical Industry

The food group of this society will hold a meeting at 8 P.M. on Wednesday, Dec. 12th, at the London School of Hygiene and Tropical Medicine, Keppel-street, W.C., when Prof. E. Waldschmidt-Leitz, professor of biochemistry in the Deutsche Technische Hochschule of Prague, will lecture on recent developments in enzyme chemistry.

Gifts to London Hospitals

According to the terms of the Bernhard Baron trust the sum of £36,970 was distributed to charities on Dec. 5th, the late Mr. Baron's birthday. The grants include £14,380 to London hospitals, and £8865 to hospitals outside London. The trust has also granted £25,000 towards the £250,000 required by St. George's Hospital for its rebuilding scheme. Mr. E. W. Meyerstein has offered a second £25,000 and has made an appeal for eight similar gifts to make up the amount required.

Joint Tuberculosis Council

At a council meeting held in London on Nov. 24th it was reported that some grant would probably be available in aid of the work of the employment committee. The committee investigating the results of artificial pneumothorax treatment had collected 4283 cases, but on actuarial advice they were rejecting series with more than 3 per cent. of cases "lost sight of." This would leave some 3900 to analyse. With the controls there were 7000 cards to be prepared and sorted so that it would be six months before a preliminary outline could be made. The greater part of the meeting was spent in discussing a memorandum on the examination of contacts presented by Dr. Ernest Ward. Something should be done to meet the difficulty of young adult contacts who will not stay at home to be examined there, or attend a dispensary for the purpose. On behalf of the milk committee, Prof. W. W. Jameson recommended the Council to support the findings of the committee on cattle diseases of the Economic Advisory Council, but to oppose any suggestion that the Milk Marketing Board's scheme of accredited herds would do anything towards the production and distribution of a safe milk free from infection. After discussion the Council reaffirmed its resolution of April 20th, 1934,

"that protection of the children from the risks of infection can be secured only by adequate pasteurisation or by boiling the milk, and notes with every sympathy the corresponding advice given by the Board of Education and adopted by the London County Council and certain other education authorities under the expert direction of the corresponding medical officers of health."

A series of post-graduate courses are being planned for 1935, the chief one at Victoria Park Hospital on recent advances in technique in the diagnosis and treatment of disease of the lungs.

A NEW nurses' home at Wrexham War Memorial Hospital has been opened by Lady Howard de Walden, with accommodation for 60 nurses in separate bedrooms.

THE guild of the old patients of the Gordon Hospital for Rectal Diseases have shown their gratitude for restored health by presenting a cheque for £1000 towards the rebuilding fund.

Aberdeen Medico-Chirurgical Society

At the annual general meeting of this society on Nov. 22nd Dr. William Brown was elected president and Dr. H. Edgar Smith secretary for the ensuing year.

West London Hospital

It is announced that this hospital is to be rebuilt at a cost of some £54,500. A start is to be made at once on the casualty and X ray departments, and on better accommodation for the medical and nursing staffs.

Guest Hospital, Dudley

The older portion of this hospital is to be demolished and a new administrative block erected in its place at a cost of £25,000. The old building is crumbling rapidly and much of it is supported in scaffolding.

Cornelia Hospital, Poole

A new maternity ward was opened recently by Lady Carisbrooke. Until a short time ago the ward was a converted army hut and the cost of the work is about £45,000.

Money from "Rubbish"

The sum of £900 has been raised by the Harrow and Wealdstone Hospital rubbish fund. Discarded clothing, furniture, newspapers, rags, bottles, jars, metal, or old iron are all collected by the hospital van.

Demonstration of Medical Films

A demonstration of medical and surgical films will be given under the auspices of the Deutsche Gesellschaft für Wissenschaftliche Filme on Sunday, Dec. 16th, at 11 A.M. at the Academy Cinema, 165, Oxford-street, London, W. The programme includes fertilisation and first segmentation of the rabbit ovum (Prof. Fommolt, University Clinic for Women, Berlin); version and delivery in transverse presentations (Dr. Schultze, University Clinic for Women, Berlin); tumours of the brain (Dr. Albrecht, Nerve Clinic, Charité, Berlin); action of the heart (Prof. Winterstein, Physiological Institute, University of Breslau); and cholecystectomy in empyema of the gall-bladder (Prof. Kuettner, Surgical Clinic, University of Breslau). Members of the medical profession will be admitted on presentation of their visiting card.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MONDAY, Dec. 10th.

United Services. 4.30 P.M., Squadron-Leader E. D. D. Dickson: The Choice of an Anæsthetic under Conditions of Active Service. Col. E. M. Cowell: New Methods of Front Line Evacuation of Wounded.

TUESDAY.

Dixon Memorial Lecture. 5 P.M., Sir Henry Dale, F.R.S.: Pharmacology and Nerve-endings.

Psychiatry. 8.30 P.M. Discussion on Mental Hygiene: Preventive Measures in Childhood, by Dr. Susan Isaacs and Dr. William Moodie. Members of the Section of Epidemiology and State Medicine are invited.

FRIDAY.

Clinical. 5.30 P.M. (Cases at 4.30 P.M.) Dr. W. M. Feldman: 1. Transposition of Viscera. Dr. Gerald Slot: 2–3. Osteo-arthritis Treated by Epidural Injection. Other cases will be shown.

Ophthalmology. 5 P.M. Clinical Meeting at the Central London Ophthalmic Hospital, W.C. Cases will be shown.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W.

MONDAY, Dec. 10th.—8.30 P.M., Dr. Basil T. Parsons-Smith: The Thyrotoxic Heart.

SOUTH-WEST LONDON MEDICAL SOCIETY.

WEDNESDAY, Dec. 12th.—9 P.M. (Bolingbroke Hospital, Bolingbroke-grove, Wandsworth Common). Dr. Z. Mennell and Dr. M. D. Nosworthy: Ether is not Dead.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 26, Portland-place, W.

THURSDAY, Dec. 13th.—8.15 P.M., Major H. C. Brown and Dr. J. C. Broom: The Importance of Electric Charge in Certain Aspects of Immunity (preceded at 7.45 P.M. by a demonstration). Dr. L. W. Hackett: Some New Types of Eggs of *Anopheles maculipennis*.

BIOCHEMICAL SOCIETY.

SATURDAY, Dec. 15th.—2.30 P.M. (Biochemical Department, Johnston Laboratories, University of Liverpool), Short Communications and Demonstration.

MEDICAL SOCIETY OF INDIVIDUAL PSYCHOLOGY.

THURSDAY, Dec. 13th.—8.30 P.M. (11, Chandos-street, W.), Dr. F. H. Bodman: Some Cases of Colitis.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.

FRIDAY, Dec. 14th.—8.45 P.M. (Miller General Hospital), Sir Humphry Rolleston: The Shifting Sands of the Architecture of Medicine.

PADDINGTON MEDICAL SOCIETY.

TUESDAY, Dec. 11th.—9 P.M. (Great Western Royal Hotel, Paddington), Dr. R. Galway Murray: Rotary Movement and the Medical Profession.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James' Hospital, Ouseley-road, S.W.

WEDNESDAY, Dec. 12th.—4 P.M., Mr. L. Phillips: Some Medical Aspects of Gynæcology.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn-fields, W.C.

THURSDAY, Dec. 13th.—5 P.M., Mr. Victor Bonney: Functional Derangement of the Intestine that follows Abdominal Operations. (Bradshaw lecture.)

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Dec. 10th, to SATURDAY, Dec. 15th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, W. Tues., 2.30 P.M., Dr. A. E. Clark-Kennedy: Ketosis. Wed., 8.30 P.M., Dr. Stanley Wyard: Diet in Gastric Disease. —BROMPTON HOSPITAL, S.W. Wed. and Frid., 5 P.M., Course in chest diseases.—Courses, &c., are open only to members and associates of the Fellowship.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, Dec. 10th.—10 A.M., medical wards, skin clinic. 11 A.M., surgical wards. 2 P.M., surgical wards, gynæcological wards, eye and gynæcological clinics.

TUESDAY.—10 A.M., medical wards. 11 A.M., surgical wards. 2 P.M., throat clinic.

WEDNESDAY.—10 A.M., children's clinic. 2 P.M., medical wards, eye clinic. 3.45 P.M., venereal diseases demonstration.

THURSDAY.—10 A.M., gynæcological and neurological clinics. 11.30 A.M., fracture demonstration. 2 P.M., eye and genito-urinary clinics.

FRIDAY.—10 A.M., skin clinic. Noon, lecture on treatment. 2 P.M., throat clinic.

SATURDAY.—10 A.M., children's and surgical clinics, medical wards.

There will be no lectures at 4.15 this week.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.

WEDNESDAY, Dec. 12th.—3 P.M., Mr. D. H. Patey: Intestinal Obstruction and its Treatment in the Light of Recent Work.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

FRIDAY, Dec. 14th.—4 P.M., Mr. F. W. Watkyn-Thomas: Infection of the Petrous Pyramid.

CHARING CROSS HOSPITAL MEDICAL SCHOOL, W.C.:

SUNDAY, Dec. 9th.—10.30 A.M., Dr. Russell J. Reynolds: Radium Therapy. 11.45 A.M., Mr. A. C. MacLeod Renal Tuberculosis.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.

THURSDAY, Dec. 13th.—9 P.M., Dr. J. A. Drake: Dermatology in General Practice.

BRITISH RED CROSS SOCIETY'S CLINIC FOR RHEUMATISM, Peto-place, N.W.

THURSDAY, Dec. 13th.—8.30 P.M., Dr. M. B. Ray: Baths in the Treatment of Rheumatic Diseases.

BROWN INSTITUTION.

MONDAY, Dec. 10th, and WEDNESDAY and FRIDAY.—5 P.M. (London School of Hygiene, Keppel-street, W.C.), Prof. F. W. Twort: Primitive Forms of Life.

INSTITUTE OF HYGIENE, 28, Portland-place, W.

WEDNESDAY, Dec. 12th.—3.30 P.M., Dr. Alfred Cox: Future of Preventive Medicine.

CHADWICK PUBLIC LECTURES.

MONDAY, Dec. 10th.—5.30 P.M. (London School of Hygiene, Keppel-street, W.C.), Dr. F. R. Seymour: Men and Masses.

LEEDS GENERAL INFIRMARY.
TUESDAY, Dec. 11th.—3.30 P.M., Dr. Bibby: V.D. Demonstration.

LEEDS PUBLIC DISPENSARY AND HOSPITAL.
WEDNESDAY, Dec. 12th.—4 P.M., Mr. A. Gough: Breast Tumours.

NEWCASTLE GENERAL HOSPITAL.
SUNDAY, Dec. 9th.—10.30 A.M., Mr. G. A. Mason: Scope of Chest Surgery.

ANCOATS HOSPITAL, Manchester.
THURSDAY, Dec. 13th.—4.15 P.M., Mr. E. E. Hughes: Carcinoma of the Prostate.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE EAR, NOSE, THROAT, AND CHEST.
WEDNESDAY, Dec. 12th.—4.30 P.M., Mr. R. H. Smith: Adenoids.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, Dec. 11th.—4.15 P.M., Mr. W. H. Hey: The Year's Advances in Surgery.
FRIDAY.—4.15 P.M., Mr. A. Graham Bryce: Demonstration of Surgical Cases.

GLASGOW POST-GRADUATE ASSOCIATION.
TUESDAY, Dec. 11th.—3.30 P.M. (Faculty Hall, St. Vincent-street), Prof. J. M. Munro Kerr: Primary Causes of Maternal Mortality and Morbidity and their Prevention.
WEDNESDAY.—4.15 P.M. (Ear, Nose, and Throat Hospital), Dr. W. C. Macartney: Ear, Nose, and Throat Cases.

Appointments

ADDISON, O. L., F.R.C.S. Eng., has been appointed Emeritus Surgeon to the West London Hospital.

BRAMLEY, G. F., M.D. Leeds, D.P.H., Senior Assistant Medical Officer of Health for General Purposes to the Public Health Department of the City of Birmingham.

PAIN, A. B., Ch.M. Leeds, F.R.C.S. Eng., Honorary Visiting Orthopædic Surgeon to the Dewsbury and District General Infirmary.

SILCOCK, F. A. E., M.D. Belf., D.P.H., Honorary Assistant Physician for Diseases of the Skin to the Leicester Royal Infirmary.

SIMPSON-SMITH, A., M. Chir. Camb., F.R.C.S. Eng., Honorary Assistant Surgeon to the West London Hospital.

Cardiff Royal Infirmary.—The following appointments are announced:—
HAMMOND, T. E., F.R.C.S. Eng., Honorary Surgeon;
MALIPHANT, R. G., M.D., M.R.C.P. Lond., F.R.C.S. Eng., M.C.O.G., Honorary Gynæcologist; and
PHILLIPS, WILLIAM, M.D. Wales, M.R.C.P. Lond., Honorary Assistant Physician.

Certifying Surgeon under the Factory and Workshop Acts: Dr. W. H. REES (Talybont District, Cardiganshire).

Vacancies

For further information refer to the advertisement columns.

Aberdeen University.—Lecturer in Morbid Anatomy. £400.
Barnstaple, North Devon Infirmary.—Res. M.O. At rate of £150.
Bath, Royal Mineral Water Hospital.—Hon. Physician.
Birmingham, Selly Oak Hospital.—Jun. M.O. £200.
Bournemouth County Borough.—Asst. M.O.H. and Asst. School M.O. £500.
Brighton, Royal Sussex County Hospital.—H.S. £150.
Bristol General Hospital.—Two H.P.'s, Two H.S.'s, Res. Obstet. O., H.S. to Spec. Depts. Each at rate of £80. Also Cas. H.S. At rate of £100.
Burton-upon-Trent, County Borough.—Dep. M.O.H., &c. £600.
Connaught Hospital, Walthamstow, E.—H.S. At rate of £100.
Denbighshire County Council.—Asst. M.O. £650.
Derbyshire County Sanatorium, near Chesterfield.—Res. Asst. M.O. £350.
Dunedin Hospital, New Zealand.—Res. Surg. O. £500.
Durham County Council.—Deputy County M.O.H. £960.
Durham County Mental Hospital.—Asst. M.O. £350.
Durham, Seaham Hall Sanatorium, &c.—Jun. Res. M.O. £200
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Two Med. Regs. Each £100.
Hospital for Sick Children, Great Ormond-street, W.C.—Res. M.O. for Country Branch. At rate of £250.
Hull Royal Infirmary.—Cas. O. At rate of £150.
Ilford, King George Hospital.—Res. Med. and Surg. O.'s. Each £250. Also Cas. O. At rate of £150. Also H.P. and H.S. Each at rate of £100.
Kingston and District Hospital.—Jun. Res. M.O. At rate of £250.
Lincoln, The Lawn.—Asst. M.O. £300.
L.C.C.—Jun. M.O.'s. £7 per week.
London University.—Chair of Physiology at St. Mary's Hospital Med. Sch. £1000.
Manchester, Crumpsall Hospital.—Asst. M.O. At rate of £200.
Manchester, St. Mary's Hospitals.—Two H.S.'s for Whitworth-street West Hospital. Each at rate of £50.
Margate and District General Hospital.—Res. M.O. £150.
Metropolitan Hospital, Kingsland-road, E.—Res. Cas. O. £100.
National Temperance Hospital, Hampstead-road, N.W.—Hon. Dental Anæsthetist.
Newcastle-upon-Tyne Education Committee.—Asst. School M.O. £650.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Sen. Accident Room H.S. At rate of £150. Also Res. Appts. Each at rate of £50. Also Two H.S.'s for Leazes Hospital. Each at rate of £100.
Northampton General Hospital.—Hon. Asst. Surgeon.
Portsmouth, St. Mary's Hospital.—Jun. Asst. Res. M.O. £250.
Princess Elizabeth of York Hospital for Children, Shadwell, E.—H.S. At rate of £125.
Reading, Royal Berkshire Hospital.—Two H.S.'s. Also Cas. O. Each at rate of £125.
Royal Chest Hospital, City-road, E.C.—Clin. Asst.
Royal Eye Hospital, Southwark, S.E.—Part-time Bacteriologist. £100.
Royal London Ophthalmic Hospital, City-road, E.C.—Refraction Asst. for London County Council School Dept. £160.
Royal Masonic Hospital, Ravenscourt Park, W.—Res. Surg. O. At rate of £250.
Ryde, Royal Isle of Wight County Hospital.—Res. H.S. £180.
St. Mark's Hospital for Cancer, &c., City-road, E.C.—Clin. Assts.
St. Mary's Hospital for Women and Children, Plaistow, E.—Hon. Ophth. Surg.
St. Peter's Hospital for Stone, Henrietta-street, W.C.—Clin. Assts.
Salisbury General Infirmary.—H.S. At rate of £125.
Sheffield Royal Infirmary.—H.P., Ophth. H.S., Asst. Cas. O. Also Asst. Aural and Ophth. H.S. Each at rate of £80.
Shoreham-by-Sea, Southlands Hospital.—Second Asst. M.O. £300.
Tunbridge Wells, New Kent and Sussex Hospital.—Sen. H.S. £175.
Walsall and West Bromwich, Barr Colony.—Res. Asst. M.O. £275.
West London Hospital, Hammersmith, W.—H.P., two H.S.'s. Res. Anæsthetist. Each at rate of £100. Also Res. Asst. Surgeon. £200.
Willesden General Hospital, Harlesden-road, N.W.—Res. Cas. O. At rate of £100. Also Hon. Clin. Assts. for Out-Patients' Dept.
Wilts County Council.—County Tuber. O. £750.

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Longtown, Cumberland, and Kirkby Stephen, Westmorland.

Medical Referee under the Workmen's Compensation Act, 1925, for the Bridgwater, Bristol, Wells, and Weston-super-Mare County Court Districts (Circuit No. 54), and for the West London Brompton County Court District Circuit No. 37. Applications should be addressed to the Private Secretary, Home Office, Whitehall, London, S.W.1, before Dec. 28th.

Births, Marriages, and Deaths

BIRTHS

BAXTER.—On Nov. 30th, at a West End nursing-home, the wife of William Baxter, M.B. Lond., Whitton-gardens, Greenford, Middlesex, of a daughter.

GUNN.—On Nov. 20th, the wife of Alistair Gunn, M.D. Wales, of Croydon, of a son.

HAWKSLEY.—On Nov. 21st, at King Henry's-road, N.W., the wife of John Callis Hawksley, M.D. Lond., of a daughter.

JACKSON.—On Nov. 29th, at The Avenue, S.E., to Eileen Jackson, M.R.C.S., the wife of W. Eric Jackson, LL.B., of a son.

JEPPS.—On Nov. 26th, at Edge End, Broadstairs, the wife of Dr. J. W. W. Jepps, of a third son.

KING.—On Nov. 21st, at Devonshire-place, W., the wife of Reginald A. King, F.R.C.S., of a son.

MCCURRICH.—On Nov. 25th, at Brunswick-road, Hove, the wife of H. J. McCurrich, M.S., F.R.C.S., of a daughter.

MILNER.—On Nov. 30th, the wife of Silvanus M. Milner, F.R.C.S., of Manchester, of a son.

O'DONOVAN.—On Nov. 20th, at Park-terrace, Nottingham, the wife of P. H. O'Donovan, M.D. Lond., of a son.

VANCE.—On Nov. 25th, at Hillcrest, Abbotswood, Guildford, the wife of Lieut.-Colonel R. L. Vance, I.M.S., of a son.

MARRIAGES

KEANE—SANDEMAN.—On Nov. 15th, at the Citadel Military Chapel, Cairo, Major C. G. G. Keane, O.B.E., R.A.M.C., to Gracie (*née* Denny), widow of Charles Vaughan Sandeman.

MELLOWS—WEBB.—On Nov. 27th, at the Guildhall, City of London, Dr. Percival B. P. Mellows, to Gwendolen Webb.

O'DONNELL—HEALY.—On Oct. 24th, at St. Michael's Church, Dun Laoghaire, Michael J. O'Donnell, M.B., M.R.C.P.I., to Dorothy Healy, M.B.

DEATHS

BURKE.—On Nov. 26th, at the County Infirmary, Downpatrick, Ireland, Joseph D. Burke, M.B. R.U.I., late Senior M.O., St. Audry's Mental Hospital, Melton, Suffolk.

CORMACK.—On Tuesday, Nov. 27th, at Edinburgh, James Grieve Cormack, F.R.C.S. Edin.

FOUNTAIN.—On Nov. 25th, at Ruislip, Edward Osborne Fountain, B.A. Camb., M.D. Brux., aged 77 years.

JACOMB-HOOD.—On Nov. 28th, at Hove, very suddenly, Charles John Jacomb-Hood, M.R.C.S.

MULLER.—On Nov. 25th, at a nursing-home, Jennie Constance Muller, M.D. Brux., L.S.A., late S.P.G. Mission, Delhi, aged 68.

PAULIN.—On Nov. 27th, at Malpas, Cheshire, George Alexander Paulin, L.R.C.P., L.R.C.S. Edin.

PORTER.—On Nov. 24th, at Kensington Park-road, London, W., Agatha Porter, L.R.C.P. and S. Edin., aged 82.

POWELL.—On Dec. 4th, at Brompton Hospital, after a long illness, H. E. Powell, librarian of the Royal Society of Medicine.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE PRACTICAL OUTCOME OF RECENT RESEARCH ON HORMONES*

BY E. C. DODDS, M.V.O., M.D., D.Sc., F.R.C.P.

COURTAULD PROFESSOR OF BIOCHEMISTRY IN THE UNIVERSITY OF LONDON, MIDDLESEX HOSPITAL

ADVANCES made in the field of hormones have been greater than in any other subject during the last ten years. It will perhaps be remembered that the first clear-cut demonstration of the general principles of internal secretion was given by Sir William Gull in 1874 in his classical papers on myxœdema. He described the condition very accurately and emphasised the fact that it was always associated with atrophy of the thyroid (Gull, 1874). A few years later these observations were extended by Ord (1878) and the name—myxœdema—was suggested. By 1890 the condition of myxœdema was well associated with degeneration of the thyroid gland in the minds of most observers. In the following year Murray attempted to relieve the symptoms by the injection of the thyroid gland. It is interesting to recall the method he employed for its preparation. One lobe of a sheep's thyroid was finely minced and extracted for 24 hours with glycerol containing 0·5 per cent. phenol; the resulting material was then pressed through a sterile cloth and the fluid thus obtained was used for subcutaneous injection. The first patient to be treated was a woman, aged 46, showing typical symptoms of myxœdema; the injections were given subcutaneously twice weekly. The change in the patient was dramatic. Her appearance had altered completely, the harsh dryness of the skin had given place to the normal moist texture, and the mental and physical outlook had also returned to normal; it is also interesting to note that menstruation had returned.

This formed the first definite example of a detailed study and solution of a disease of an ordinary internal secretion, and the results bore out the previous observations of Kocher (1883) who showed that if the thyroid gland be completely removed in the human subject, myxœdema will develop. Murray's observations were confirmed and extended, and in 1892 Fox and Mackenzie independently showed that equally good results could be obtained by oral administration of the gland.

These investigations differ in many respects from those to be described later, in that the complete solution to this problem came from the clinician without any intervention from the laboratory worker. This was due to two factors: first and foremost, the brilliance and clear-sightedness of the original clinical investigators; and secondly, the fact that the internal secretion of the thyroid gland is a very stable substance capable of easy extraction, and it is also active by mouth. It is not necessary for me to point out the great importance of these discoveries about the thyroid gland to the general medical practitioner, since there must be few here who have not at one time or another prescribed large quantities of the dried gland. The subsequent history is decidedly uneventful from the point of view of clinical medicine, yet from the laboratory point of view it is fraught with the greatest interest.

It will be remembered that the active principle was found to contain iodine, and that eventually a crystalline organic compound was isolated by E. C. Kendall (1915). Later the constitution of this substance was worked out by C. R. Harington, who then succeeded in synthesising the substance (Harington and Barger, 1927). Unfortunately this new substance, thyroxine, is relatively insoluble and does not appear to be suitable for clinical use. He has, however, recently prepared a modified derivative known as 3:5-di-iodo-thyronine, which is much more soluble and may be of value in clinical medicine (Anderson, Harington, and Murray Lyon, 1933).

As we have pointed out, the very biochemical nature and stability of the thyroid hormone has resulted in a ready solution to the problem of myxœdema.

Insulin and Adrenaline

Let us now turn to another hormone which has baffled both clinicians and laboratory workers until a comparatively recent date. The whole subject of diabetes mellitus has been discussed so often that it is only necessary for us to point out the salient features. Von Mering and Minkowski in 1889 showed that removal of the pancreas from the dog produced a condition similar to that of diabetes mellitus, and following this important publication clinicians throughout the world began to treat diabetes by the administration of raw pancreas by mouth. Unfortunately the very nature of the hormone was against the success of this from the start, and unlike their contemporaries working on the thyroid gland, their results were a complete failure. The laboratory workers fared no better since the most elaborate extracts of the pancreas proved equally unavailing. It remained for Banting to evolve the idea that the active principle was a protein and that any extract of the pancreas containing—as it would—trypsin would naturally be inactive unless means were taken to destroy the tryptic activity. The story of his success is well known and I will not recapitulate it here, but the experiments of Banting and Best (1921–1922) were thus able to lay the foundation for the large scale manufacture of insulin; the success with which insulin is used now can never be appreciated except by those who had to deal with diabetics in the days before 1923.

We may quote again the results of research that was carried on solely in the laboratory. One of the first experimental observations ever made on the doctrine of internal secretions were the classical observations of Oliver and Schafer in 1895. They showed that if extracts were made from the tissues of the body a reduction of the blood pressure occurred in all cases except two; in the case of extracts from the tissues of the suprarenal gland and the pituitary they found that a marked rise in blood pressure occurred, most particularly in the case of the suprarenal. This immediately formed an association of ideas in the minds of readers of the day between these experiments and Addison's disease which is characterised, amongst other signs, by the destruction of the suprarenal together with a chronic low blood pressure. Extensive chemical work succeeded in isolating from the medulla a crystalline compound called adrenaline (Abel, 1898–1902; Takamine, 1901; Aldridge, 1901; Bertrand, 1904). Later the hormone was synthesised. Again, there must be very few present this evening who have not used adrenaline in one form or another during the past few days.

The Sex Hormones

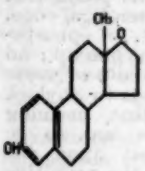
The preceding brief review is intended as an introduction to my main subject—namely, recent advances in relation to sex hormones. I have indulged in this somewhat lengthy introduction in the hope of stimulating your interest, and by quoting a number of instances where theoretical laboratory work has become of practical therapeutic value, I hope to show you that the experimental laboratory agent of to-day is to-morrow the therapeutic agent for the general practitioner.

It is difficult to call to mind any subject upon which more rubbish has been written than the sex hormones. This is very largely the result of the general public's desire for the maintenance of youth and all that it implies, together with the successful exploitation of this trait by commercial firms. After

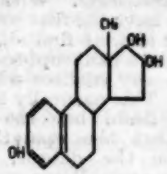
* An address delivered before the Hull Medical Society on Nov. 23rd.

years of skilful propaganda the practitioner emerges to-day completely bewildered but in a thoroughly sceptical frame of mind concerning the numerous publications on the subject. At the very outset I can assure you, with little fear of justifiable scientific contradiction, that no preparations of the male or female sex hormones, including the corpus luteum hormone, have been available in sufficient quantity to be of any clinical value and in most cases the preparations were actually negative. It follows therefore that we can safely reject the clinical literature on these subjects up to within a very few years ago.

It will be necessary for us first to consider the laboratory experiments which have led to the successful solution of the very difficult problem of the therapeutics of the female sex hormone. It has been known that the cyclical changes called œstrus in animals such as the rat and mouse can be completely abolished by the removal of the ovaries. Allen and Doisy, the American investigators, demonstrated in 1923 that these changes could be reinstituted by the injection of the fatty substances extracted from the ovaries by volatile solvents. A great deal of work has also been done in this country on this substance which has been called "œstrin." Unfortunately in the early days the yields of œstrin were extremely small and consequently there was no possibility of performing clinical experiments. The chemical constitution of the extract remained a complete mystery, and apart from the fact that it was known to contain only carbon, hydrogen, and oxygen, and to be soluble in volatile solvents, its structure remained a baffling problem. Œstrin was found to occur only in the ovary and the placenta. The greatest advance was made by the two German workers Aschheim and Zondek, when they showed in 1927 that this hormone could be extracted in large quantities from the urine of pregnant women; and, moreover, that the substance was present in a much purer form than that in which it could be extracted from the ovaries and placenta. It was further shown that the urine of pregnant mares was particularly rich in œstrin, and from this source very large quantities of the material have been prepared. Intensive chemical work was performed in England, America, and Germany which resulted in the simultaneous announcement of the crystallisation of the compound by Doisy (Doisy, Veler, and Thayer, 1929 and 1930) in America and by Butenandt (1929) in Germany; the results were quickly confirmed in this country by Marrian (1930) and by Laqueur (1929) and his co-workers in Holland. Further chemical work on the constitution of the compound showed that it belonged to the group of sterols and therefore possessed a formula similar to cholesterol, ergosterol, and vitamin D. The formulæ of the hormone in two of the forms in which it occurs in the urine are shown here.



Ketohydroxy œstrin.



Trihydroxy œstrin.

The theoretical implications of this structure are very significant, but we can only indicate here that the whole subject of sterol metabolism has taken on an entirely new aspect.

It has been shown that a modification of the hormone by its partial hydrogenation (Schwenk and Hildebrandt, 1933) will increase its activity up to four times. The repetition of these experiments in my laboratory has amply confirmed these claims. Standardisation methods employed in the Courtauld Institute of Biochemistry showed an increase of fivefold in the activity on hydrogenation. This is of the utmost importance since it reduces the quantity of solid necessary to be injected to produce the desired effects. The increase in activity following hydrogenation has been fully confirmed in my laboratory.

At the same time that these experiments have been progressing a number of workers have studied the corpus luteum hormone. Thus Corner and Allen in 1929 succeeded in showing that by means of an alcoholic extract of corpus luteum it was possible to produce progestational changes in castrated animals; by a combination of injections of œstrin and corpus luteum extract a condition identical with that of pseudo-pregnancy could be produced. Intensive chemical work has again succeeded in elucidating the constitution of this compound. The work of Butenandt, Fels, and others has shown that the substance belongs to the same group as œstrin and is, in fact, a diketone. Very recently Butenandt and Schmidt (1934) have shown that it may be produced from pregnandiol, an active alcohol found in the urine of pregnancy, whilst Fels and his collaborators have shown that it may be synthesised from stignasterol (Slotta, Ruschig, and Fels, 1934). It would appear therefore that the difficulty of obtaining adequate supplies of this material will shortly be overcome.

Some Clinical Applications

I am now in a position to indicate the importance of these researches from a purely clinical point of view. Parkes and his co-workers have shown conclusively that œstrin follows the body-weight dosage relationship (Marrian and Parkes, 1930; Parkes and Zuckerman, 1931). That is to say, the larger the animal the more one has to give. Working on the basis of rats, mice, &c., Parkes prophesied that some 500,000 mouse units would be necessary to produce a change in the human female. Until the laboratory work that I have described had been completed such quantities appeared to be fantastic to physiologist and biochemist alike, whilst even if such amounts could be produced at all, the cost would have been quite outside the range of practical politics. Again, in the human female it is necessary to employ corpus luteum hormone if the full ovarian cycle is to be reproduced. A most interesting series of researches has been conducted by Kaufmann in the Charité in Berlin. Working with the dihydro derivative of œstrin and the corpus luteum hormone, Kaufmann was able to show that provided a certain definite sequence of injections were followed, menstruation could be produced with unfailing regularity in women who had undergone the operation of bilateral ovariectomy. The significance of these investigations is easy to appreciate since they indicate for the first time that the menstrual process can be produced at will in ovariectomised persons. The scheme of injections is shown by the following Table which is reproduced from Kaufmann's paper (Proc. Roy. Soc. Med., 1934, xxvii., 849).

Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
—	1 E	2	3	4 E	5	6
7	8 E	9	10	11 E	12	13
14	15 E	16	17	18	19 CL	20 CL
21 CL	22 CL	23 CL	24	25 M	26 M	27 M

E = 50,000 mouse units œstrin. CL = 20 clinical units of corpus luteum hormone. M = menstruation.

These investigations have been repeated many times in my laboratory with complete success. They are important in that they show that only œstrin and corpus luteum hormone are necessary for the production of menstruation, and they show that, provided a woman possesses a uterine mucosa, menstruation can always be induced. Similar results may be demonstrated in both primary and secondary amenorrhœa. We are as yet only at the beginning of clinical applications of these amazing discoveries. Kaufmann has reported some remarkable results in the successful treatment of infantilism by the injection of large

quantities of œstrin over long periods, whilst the corpus luteum hormone appears to control many cases of metrorrhagia. The employment of large quantities of this hormone in the treatment of climacteric disturbances and its allied troubles has also proved successful. There appears to be little doubt that by the use of the various hormones many cases of menstrual disorder can be dealt with by the physician and operative interference can be avoided. It is impossible for me to give more than this brief summary, but there is no doubt that the biochemist and physiologist have now placed in the hands of physicians some therapeutic agents of great power and possibilities.

One final illustration of the value of laboratory research among the hormones may be quoted in the Aschheim-Zondek reaction. It will be remembered that Aschheim and Zondek (1927) demonstrated that the urine of pregnancy contained large quantities of œstrin. At the same time they were able to show that if the urine be injected into immature female animals puberty will supervene; the ovaries become active as shown by the ripening of the follicles and the formation of corpora hæmorrhagica. They found that œstrin was excreted in various conditions apart from pregnancy, but that the appearance of prolan—as this ovary-stimulating substance is called—occurred only in pregnancy and chorion epithelioma. Traces are excreted in certain forms of genital carcinoma. On this is based the Aschheim-Zondek reaction for pregnancy which may be described as one of the most accurate of all forms of laboratory diagnosis. A prolonged personal experience of this test has convinced me that its accuracy is even higher than the published figures—namely, 98 per cent. The reaction becomes positive with the formation of the placenta which is usually in the fifth or sixth week. A positive reaction indicates pregnancy at any period, whilst a negative reaction obtained earlier than the sixth or seventh week should be repeated at the eighth week in order to be certain of diagnosis. This again is one of the most important modern advances which is of the utmost value to all who practise medicine. In cases of chorion epithelioma the reaction is more strongly positive than in pregnancy, with the result that diagnosis can frequently be made from the urine.

I hope that these brief remarks have succeeded in interesting you in the important new developments in the field of the sex hormones. What is now required is a true knowledge of the effect of these compounds on a large number of clinical cases, and it is here that the general practitioner can combine therapeutics with research, since the absolute standard of activity of the preparations can be guaranteed. It is however important to emphasise that if the high dosages recommended by Kaufmann be employed, the exact time intervals given in his publication should be followed. Sporadic or indiscriminate use of the material can only lead to disappointing results, whilst strict attention to these details will give a correct response.

FOOD LAWS—BRITISH AND FOREIGN

MOST civilised countries have food laws, which vary greatly, so that it is not easy to carry on a mixed export trade without incurring considerable risks. Possibly some day the League of Nations may seek to secure some measure of agreement on the percentages of desirable and undesirable constituents permitted or forbidden, on colouring matter, and on other requirements and limitations appropriate to the more ordinary foods. These should not be of the kind to destroy all character under the pretext of wholesomeness. In the absence of such agreement the exporter of food to foreign countries must ascertain either by trial and error or by judicious inquiry what requirements he must satisfy as to "nature, quality and substance," whatever these words taken together may mean, in order to comply with the laws of the importing country.

Mr. C. L. Hinton has tried in a recent book[1] to "simplify the task of the manufacturer wishing to explore new markets, or to control the composition and quality of his products in accordance with requirements of existing markets," and he has achieved considerable success. It is interesting to note that a maker of unsweetened condensed milk in New Zealand would find that 7·8 per cent. of fat and 25·5 per cent. of total solid which satisfies the local law, would be acceptable in Canada or Germany but not in South Africa or Australia, both of which Dominions require 8 per cent. of fat and 26 per cent. and 28 per cent. respectively of total solids. If he found that the minima for the U.S.A. were the same as in his own country and did not notice that the two quantities must add up to at least 33·7 per cent., he might get into trouble, whilst in shipping to Great Britain he would have to face a standard of 9 per cent. fat and 31 per cent. total solids. Many similar divergencies between what is considered good for the people of the principal countries of the world are made clear in this book, which contains a great mass of information within a very small compass, the condensation being effected largely by the judicious use of tables. Fourteen pages are devoted to quotations from British official enactment and the agreed conventions of the jam trade. It is the intention of the publishers to bring the work up to date at frequent intervals.

THE ANCIENT ROMANS THROUGH MEDICAL EYES

THIS is the title of the Jackson Lecture, delivered at Brisbane on Sept. 7th, 1934, by Dr. Eric Jeffrey and printed in the *Medical Journal of Australia* for Oct. 6th. This lecture has been founded in honour of Dr. Ernest Sandford Jackson, whose interest in the history of our profession is well known. Dr. Jeffrey has limited his survey to the period between the foundation of Rome and the arrival of Galen on the medical stage. He has provided an interesting account of the medical knowledge at Rome at this early date which, though it contains little that is new, is yet a sound historical summary of the facts.

Starting with the "unsubstantial fabric of myth," he reminded his audience of the physiological experiment of the nurture of twins by a she-wolf, and the means whereby the wall of Rome in the building provided Remus with an admirable apparatus on which to test "the efficiency and coördination of his nervous and muscular systems," and thereby Romulus with an excuse for fratricide. With the production of the Ten Tables we have the first written legal code, which provides inter alia, at first sight, an opportunity for the creditors of a bankrupt to cut him up; no penalty attaching to any creditor who cuts off more than his fair share. This naturally leads to Shylock and his pound of flesh, but the true meaning of the statute is that the operation was to be performed not upon the debtor, but upon his goods. Medicine in early Rome was the primitive medicine of folk-lore until after Greece became subject to Rome.

The lecturer has much to say upon the Rome of the period, in which he discusses the types of dwelling-house, the frequency of fires in spite of the fact that the houses were usually built of stone or a kind of concrete, the domestic arrangements, baths, central heating, and the drains, the supply of water by leaden and wooden pipes which led to the houses from the public basins and fountains which drew their supply from the noble aqueducts. Lead poisoning would seem to have been uncommon. Dr. Jeffrey can only find two references to it in Vitruvius. He might be interested to read a paper by Dr. Rutherfurd, of Manchester, on lead poisoning in the first century,

[1] A Summary of Food Laws and Regulations. By C. L. Hinton, F.I.C., British Association of Research for the Cocoa, Chocolate, Sugar, Confectionery and Jam Trades. Edited by T. W. Jones, B.Sc., Editor, "Food." London: Nema Press, Limited. Pp. 90. 21s.

in the *British Journal of Ophthalmology*, 1934, p. 36, where the case of Phryx, who drank himself blind, is discussed in the view that here we have an early example of optic atrophy from lead. The diet of the Romans seems to have been poor in protein, deficient in animal fat and associated vitamins, and rickets would seem to have been common in Juvenal's day. Juno was the chief Goddess to preside over childbirth, abortion was practised by the midwives and low-class surgeons. Poisoning was common, aconite and hemlock being the most usual vehicles. Martial's epigrams come in for notice and we are reminded of his gibe, "what a grave profession medicine is!" The lecture closed with an account of the medical knowledge of Celsus, the only important Roman writer on medicine, and well repays perusal.

DAMP

IN a recent issue of the *Daily Telegraph* was published a housing supplement of 20 pages containing contributions from the Minister of Health and many authorities on architecture and social questions, including Sir Raymond Unwin, Lord Balfour of, Burleigh, Prof. C. H. Reilly, Mr. Alfred Bossom M.P., and Sir William Ray. Under the title of Healthiness and the Soundly Built House, Dr. Reginald Miller expresses the opinion that persistent damp is, medically speaking, the worst fault in any dwelling. In general, he says, professional authority would endorse the popular view that it predisposes especially to catarrhal and rheumatic disorders. The incidence of juvenile rheumatism is "heavy in low-lying districts and along watercourses, and in individual cases this prevalence is greatest in those inhabiting basements and top floors—the dampest parts of a house." All forms of damp are probably not of the same medical significance, and it seems that it is damp associated with cold that is a particular danger. Of the two chief causes of damp in dwellings—dilapidation and faulty building—the second seems to be the commoner and more potent factor. The cheap house is apt to be built on the worst site, and it is usually designed without the help of an architect. Medical opinion, Dr. Miller concludes, will endorse views expressed in a report published by the council of the Royal Institute of British Architects in 1929 in which it is urged that "no considerations of economy in cost can justify sacrificing the necessary treatment to secure a reliable waterproof shell for the building as regards roof, walls, and floor, as well as damp-course protection." By way of remedy the report urged that the erection of dwelling-houses should be subject to stricter technical supervision. All will agree at least that it is deplorable that the erection of inevitably damp houses should still be going on.

HUMANE SLAUGHTER

DELIVERING the thirteenth annual Benjamin Ward Richardson memorial lecture to the Model Abattoir Society last week, Sir Leonard Hill, M.B., F.R.S., countered the assertion sometimes made that the electrical method of slaughter, as now practised, results only in a condition of muscular spasm and inability to move. He also denied that the electrical method of producing narcosis causes congestion and œdema of the brain and tissue changes which precede the bleeding of the animal to death by cutting its throat. Against this was the fact that animals can be anæsthetised by means of electric stunning instruments for a short period and recover completely thereafter; indeed, operations could be performed with no other anæsthesia than that of the electrolethaler. Pigs were easily and perfectly anæsthetised by the electric process, and subsequently hoisted and bled without struggle or squeal; the slaughter-house thus being rendered a place of peaceful quiet. The upkeep of electrical apparatus had been found cheaper than that of guns and cartridges. For cattle the current should be applied for about 20 seconds, and an electric stunner could well be used in conjunction with the pole-axe and the cane. The sticking of animals with a short knife was not as efficient as the Jewish method in producing rapid loss of consciousness. Given a proper method of casting, the Jewish method of slaughter was efficient and humane. There was no reason, however, why the Jews should not use the electro-lethaler for cattle. They could certainly use it now for calves and sheep; it took away all the struggling and discomfort produced by casting and freed the methods of the slaughter-house from reproach.

DISPOSAL OF REFUSE

Mr. Frank Evans (Brighton) writes: "In THE LANCET of Nov. 3rd (p. 1024) reference is made to the report of the Metropolitan Boroughs Standing Joint Committee on refuse disposal. As one who has been interested in this subject for the past 30 years, I am puzzled about two points on reading this report. I cannot find a single reference to the need for a purely sanitary process of refuse disposal, nor to the fact that refuse disposal is primarily a matter for the medical officer of health and the sanitarian, rather than the borough surveyor, except in so far as the mechanical part of the particular plant is concerned. The method in use at Brighton proves my statement; there is practically no machinery and the process is as sanitary as it is possible for any refuse disposal plant to be."

We understand that the destructor invented by Mr. Frank Evans, which is on very simple lines, may be seen at work beyond Whitehawk, to the east of Brighton. It has two compartments and takes 10 loads of refuse weighing 30 cwt. in winter, and 12 loads weighing 21 cwt. in summer. These take two days to burn out and one day is required for cleaning. This type of destructor (which is known as the Fœnix) would be useful to the smaller towns and rural areas where there is sufficient room to accommodate the chambers.

NEW PREPARATIONS

A NEW HAND SOAP.—Messrs. Allen and Hanburys Ltd. (London, E. 2) have manufactured a hand soap which should certainly find a ready market. Neutral in reaction it readily gives a lather without the formation of scum, and its use keeps hands in a pleasantly smooth condition; moreover, it is economical, as half a teaspoonful or so of the fluid rubbed in thoroughly suffices to provide a lather with a little water. The antiseptic value is stated to be equal to 1:20 carbolic solution. The hand soap can be used for the cleansing of surgical instruments, elastic webbing, and delicate fabrics.

EUBION.—Messrs. Evans Sons, Lescher and Webb Ltd. (Liverpool) have given this name to chocolate tablets, a vitamin concentrate, which they have reason to think will be found useful for growing children, regular administration of one or two tablets being accompanied by increase in weight. For adults the tablets are recommended as prophylactic and therapeutic. Each tablet has the equivalent for vitamin A content of 14·22 c.cm. of cod-liver oil, and their ingestion is attended with no disturbance of gastric function.

BRITISH EPIDIASCOPES.—Messrs. Newton and Co. (72, Wigmore-street, W.1) describe a series of these instruments that should satisfy any ordinary requirements. The cost of installing an epidiascope is largely dependent on the shape and size of the room, or on the number of people before whom the demonstrations are to take place. If pictures are to be projected for any distance greater than 20 feet, and an image produced of sufficient brightness to be seen easily beyond that distance, long focus and large aperture projection lenses are required. Newton's list includes a range of instruments with suitable optical equipment for any modern auditorium at prices which are moderate when due consideration is given to quality.

THE PASSING OF TONGUE FORCEPS

AMONG minor improvements in the anæsthetist's technique in recent years none is more welcome than the banishment of tongue forceps. Formerly the patient's chief complaint on recovering from an anæsthetic was liable to be of soreness of the front or aching at the back of the tongue. The site and severity of the symptom depended on the type of forceps used and on the force of the pull on the tongue. One kind of forceps after long application cut nearly through the tongue; other instruments, which made only a small puncture in the tongue and permitted of its easy traction, were comparatively harmless, and it was always possible for the more enlightened to hold the tongue forward after seizing it between thumb and finger in a towel. Nowadays the anæsthetist uses an airway to forestall the need for tongue traction or passes a soft lubricated tube through the nose into the nasopharynx or into the trachea. In commenting on these changes in the current issue of the *University of Leeds Medical Magazine*, Dr. W. Stanley Sykes apostrophises the gag and tongue forceps as "brutal instruments." This is surely an overstatement. Few anæsthetists even to-day would be happy without a gag at their ready command.

THE DRAGON SLAYER[1]

UNDER this arresting title we have a short account of the work of Ronald Ross with many pertinent remarks upon his personality. Mr. Dobson tells the story of the great discovery in a romantic way, alluding to Ronald Ross's other self as Hippocrates, classicist and poet; and he includes in his memoir a concise little history of the efforts made through the past 150 years or so to mitigate or abolish malaria. He is clear in detailing the elaborate story of the intervention of the mosquito as transmitter, and sets down the different stages of the confirmatory work with detailed accuracy, drawing largely upon Ross's own memoirs. While much of the contents of this small book will be familiar to the medical profession, a résumé of a great scientific discovery makes interesting reading to all, and should be particularly informing to the layman.

PLAGUE AND YELLOW FEVER

THE incidence and fatality of plague and yellow fever during the last two years are discussed in the September–October issue of the Epidemiological Report of the Health Section of the League of Nations. As regards plague no very noticeable change has occurred with the exception of a big rise in the incidence of the disease in India. In Africa the main foci are still those in Madagascar, Uganda, and Senegal; while in Northern Africa, including Algeria, Tunis, Morocco, Tripolitania, and Egypt, the disease is on the decline. In Madagascar the apparent case-fatality is very high—namely, 96 per cent. in 1933 and 95 per cent. in 1934, this being probably due to the natives, who have lost confidence in inoculation as a means of protection, hiding nearly all but the fatal cases. In the Union of South Africa there is still a great contrast between the vast extent of the epizoötic among the rodents of the veldt and the small number of sporadic human cases. In the United States, also, human plague is very rare in spite of the widespread infection of rodents. In South America no important epidemic of plague occurred in 1933–34, although the disease was still prevalent in several countries, especially Peru, Ecuador, and the Argentine Republic. In Asia, as already stated, there was a considerable increase in British India, where there was a further spread of the disease on the high plateaus of the peninsula in the districts already infected, and a return of the disease in epidemic form in Northern India (United Provinces and the Punjab), where plague had been on the decline since 1929. A notable increase of the disease also occurred in Java and there was a fresh outbreak in Manchuria. On the other hand there was a continued decline of the low sporadic incidence in Lebanon, Iraq, Ceylon, Siam, Cochin-China, and Cambodia.

During 1933 and the first nine months of 1934 yellow fever was observed only in Western Africa, the Sudan, and Brazil. The figures published relate almost exclusively to typical cases in Europeans, and are infinitely small compared with the benign atypical cases and latent infection in the infected areas whose population is almost entirely coloured.

[1] Ronald Ross, Dragon Slayer: A short account of a Great Discovery and of the Man who Made It. By J. O. Dobson, author of the Little Poor Man of Assisi, with an introduction by Sir Malcolm Watson. London: Student Christian Movement Press. 1934. Pp. 112. 3s. 6d.

THE SERVICES

REVISED CONDITIONS FOR THE NAVAL MEDICAL SERVICE

A NEW Fleet Order states that short-service medical officers entered before May 1st, 1934, and medical officers on the permanent list with less than four years' full-pay service (excluding civil hospital time) on May 1st, 1934, who have not already done so, are required to report not later than March 31st, 1935, whether or not they desire to accept the revised conditions of service for medical officers. These revised conditions and rates of pay were referred to in THE LANCET of May 26th, 1934, p. 1147, and the principal changes were set out in THE LANCET of August 25th, 1934, p. 442. In this connexion it should be remembered that two of the conditions of service are that Surgeon-Lieutenants R.N., entered for Short Service, on completion of two years' service, are required to forward a statement, through the usual Service channels, as to whether they desire to serve for a further two years after the termination of their original three years' engagement; and officers desiring to transfer to the Permanent Service are to forward an application, through the usual service channels, immediately after completing four years' service as a Short-service Officer.

ROYAL NAVAL MEDICAL SERVICE

Surg. Lt.-Comdr. T. A. Cochrane to *Drake* for Devonport Dockyard.

Surg.-Lts. S. K. Foster to *Caledon*; W. W. Simkins to *President* for three weeks' R.A.F. medical officers' course and to *Victory* for R.N.B.; J. L. S. Coulter to *President* for three months' course; A. H. O'Malley to *Centurion*; and P. N. Walker-Taylor to *Carlisle*.

ROYAL ARMY MEDICAL CORPS

Lt. (on prob.) P. H. Peacock is confirmed in his rank.

Short-Service Commn.—C. S. Gamble to be Lt. (on prob.).

REGULAR ARMY RESERVE OF OFFICERS

Capts. C. W. Badger and C. C. H. Chavasse, from Supp. Res. of Off., to be Capts.

TERRITORIAL ARMY

Capt. S. R. M. Mackay, M.B., R.A.M.C., to be Divl. Adjt., 51st (Highland) Div., vice Maj. D. H. Coats, M.B., R.A.M.C., vacated.

Supernumerary for service with the O.T.C.—H. R. Thompson (late Cadet Lce.-Corpl., Rugby Sch. Contgt., Jun. Div., O.T.C.), to be Lt. for duty with Med. Unit, Univ. of Lond. Contgt., Sen. Div., O.T.C.

ROYAL AIR FORCE

Group Capt. J. MacGregor, M.C., is placed on the retd. list.

Dental Branch.—Flight Lt. B. L. Harrington to R.A.F. Depôt, Uxbridge.

INDIAN MEDICAL SERVICE

Maj. W. M. Will to be Lt.-Col.

Lt.-Col. P. K. Tarapore retires.